DOCUMENT RESUME

ED 385 926 EA 026 952

AUTHOR Monk, David H.; Roellke, Christopher F.
TITLE What Education Dollars Buy: Evidence from New York.
SPONS AGENCY Office of Educational Research and Improvement (ED), Washington, DC.
PUB DATE Jul 95
CONTRACT R1178G10039
NOTE 61p.; Revision of paper presented at the Annual Meeting of the American Educational Research Association (San Francisco, CA, April 18-22, 1995).
PUB TYPE Reports - Research/Technical (143) -- Statistical Data (110) -- Speeches/Conference Papers (150)

EDRS PRICE MF01/PC03 Plus Postage.
DESCRIPTORS Educational Economics; *Educational Equity (Finance); *Educational Finance; *Educational Resources; High Schools; Professional Personnel; *Resource Allocation; School District Size; School District Spending; School District Wealth; *Teacher Distribution; Teacher Student Ratio
IDENTIFIERS *New York

ABSTRACT

This paper establishes the importance of examining resource-allocation behavior at microlevels of educational systems and reports on the progress being made in New York to develop and examine a set of relevant indicators. The paper presents findings that were part of a multistate effort conducted by the Consortium for Policy Research in Education (CPRE) Finance Center, which examined the allocation of educational resources at a variety of organizational levels. Specifically, the paper examines the distribution and use of professional teaching personnel within secondary schools across refined secondary subject areas (for example, advanced, regular, and remedial), with a focus on the core subject areas--English, mathematics, science, social studies, and foreign language. Data analyses were based on data collected by the New York State Education Department for the 1991-92 school year from all "regular" K-12 New York school districts. Three research-allocation indicators were developed: (1) resource-intensity levels; (2) percentage shares of teacher resources; and (3) overall pupil demand. Findings indicate that the resource-intensity level for English was flat across spending levels, but rose in the highest spending districts. A negative relationship was found to exist between the share of teacher resources devoted to English and district-spending levels. Finally, professional staffing levels in the core subject areas within the large cities were substantially lower than the state average, particularly in New York City. Eighteen tables are included. Contains 48 references. (LMI)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)
☑ This document has been reproduced as received from the person or organization originating it.
☐ Minor changes have been made to improve reproduction quality.
• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY
C. Roellke
TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

ED 385 926

What Education Dollars Buy: Evidence from New York

David H. Monk and Christopher F. Roellke
Department of Education
Cornell University

Paper presented at the annual conference of the
American Educational Research Assocation
San Francisco, California
April 18-22, 1995

Revised: July 5, 1995

This paper is part of the research program of the Finance Center of the Consortium for Policy Research in Education (CPRE), a consortium of Rutgers University, the University of Wisconsin–Madison, Cornell University, Stanford University, and the University of Southern California. The work was supported by grant #R1178G10039 from the U.S. Department of Education, Office of Educational Research and Improvement. We wish to acknowledge and express our gratitude for the assistance we have received from Brian Brent, Michael Joseph, Jennifer King, and computing consultants at the Cornell Institute for Social and Economic Research (CISER). The views expressed are our own and do not necessarily reflect those of CPRE, or its partners, or the U.S. Department of Education.

EA026952

BEST COPY AVAILABLE

I. Introduction

One of the distinguishing features of the CPRE Finance Center's research agenda is its emphasis on tracing flows of resources to points deeply embedded within educational systems.[1] More conventional research dealing with education finance in particular and education resource allocation in general has focused on the raising of fiscal resources at Federal and State levels of schooling systems and the subsequent apportionment of these resources across Local Education Agencies (LEAs), typically school districts.

It is becoming increasingly clear, however, that concerns about both productivity and equity cannot be adequately addressed solely at the school district level. The purpose of this paper is to establish the importance of examining resource allocation behavior at micro–levels of educational systems and to report on the progress being made in New York to develop and examine a set of relevant indicators. The empirical results we report herein are part of a multi–state effort being made by the CPRE Finance Center to gain insight into the allocation of educational resource at a variety of organizational levels.[2]

We begin by providing an overview of the growing interest in micro–level resource allocation. A remarkably diverse set of policy debates has drawn attention to resource allocation issues at sub–district levels, and we explore the progress that has been made. Next, we examine the conceptual underpinnings of the approach that is guiding CPRE's multi–state inquiry. We deal with both the conceptualization of a "resource flow," and the identity of background and structural features of LEAs that are likely to affect internal resource flows.

This discussion leads to a report on the New York State empirical analyses. In an earlier paper, we reported the results of analyzing fiscal data at the school district level (Monk and Roellke, 1994a). In addition, we have previously reported the results of analyzing the distribution of teacher resources across curricular areas of secondary schools (Monk and Roellke, 1995). Copies of these expenditure and staffing analyses are available upon request In this paper, we extend the staffing analyses by examining the distribution of teaching resources across refined secondary subject areas (e.g. advanced, regular, remedial). In this refined subject area analysis, our focus is on the core subject areas (English, mathematics, science, social studies, and foreign language). These analyses are conducted at a more micro level than is customary for resource allocation studies in education and offer fresh insights into how instructional resources ultimately reach students. We also extend the analysis to begin to deal with resource utilization phenomena, again within secondary schools.

---

[1]CPRE is an acronym standing for the Consortium for Policy Research in Education. It is a consortium of universities and operates two research centers, one of which is focused on matters of educational finance and productivity. The work of the Finance Center is supported by grant #R117G10039 from the U.S. Department of Education, Office of Educational Research and Improvement. The Finance Center is based at the University of Wisconsin-Madison.

[2]The other states that are being studied include California, Florida and Minnesota. See Picus, Tetreault and Hertert (1995) and Nakib (1995).

These analyses all involve the adaptation of personnel data into a resource allocation framework. This adaptation raises a number of interesting data collection issues and these are discussed in conjunction with our findings.

II. Background and Previous Research

Policymakers concerned with a highly diverse range of policy issues have become interested in micro–level resource allocation phenomena. These policy areas can be divided roughly into two broad categories: (1) concerns over productivity or efficiency in education; and (2) concerns over equity or fairness in the distribution of educational opportunities. In what follows, we provide an overview of recent activity in each of these two areas.

Productivity/Efficiency Concerns

Recent education productivity research has demonstrated the importance of using refined measures of how resources flow within schools and classrooms. For example, there has been a growing awareness of the importance of resources flowing from either parents or peers. Some studies have focused on the direct effects of resources supplied in the home or by peers on pupil performance.[3] Some on–going demonstration projects have also placed emphasis on the importance of parent and peer influences and are reporting successes (Comer, 1980, 1988; Levin, 1989, 1994; Slavin, et. al., in press). Others have considered home and peer influences in the context of their effects on grouping and tracking decisions within schools.[4] In all of these cases, more refined measures of resource flows within schools and classrooms are being found to affect pupil performance.

Researchers who are studying the effects of incentives on teacher and student behavior are also demonstrating the importance of using disaggregated measures of resource flows.[5] Progress is being made toward understanding the role of both rewards and sanctions at different levels of the educational system.[6]

Similar conclusions are being drawn by researchers dealing with alternative indicators of teacher effectiveness. A common finding in this line of research has been that global measures of teacher education are not dependably related to pupil outcomes. More recently, researchers have succeeded at disentangling teacher attributes into more refined measures of either what teachers actually know about the subject being taught (Hanushek, Gomes–Neto, and Harbison, 1992) or teachers' level of subject area preparation (Monk, 1994; Monk and King, 1994). The results of these studies are encouraging and suggest

---

[3]For a recent example where an economic model is employed, see Hanushek (1994). Coleman (1988, 1991) has developed a sociological model that draws heavily on the economic notion of human capital and uses it to understand linkages between homes, communities and schools.

[4]For examples of this type of research, see Barr and Dreeben (1983); Gamoran (1987, 1993); Hallinan and Sorenson (1985).

[5]See, for example, Allington and McGill-Franzen (1992); Hoenack (1988); and Slavin and Madden (1991).

[6]As of the 1990-91 academic year, Indiana, Kentucky, South Carolina, and Ohio all had financial incentives tied to school level performance indicators. For more details, see Monk (1994).

that part of the key to understanding more about the effectiveness of teachers and teaching lies in the utilization of more refined measures of what teachers know and are capable of accomplishing in classrooms.

Studies of organizational climate are also demonstrating the importance of using disaggregated data. Research by Pallas (1988) and Rowan, Raudenbush, and Kang (1991) have begun to challenge the idea that a school's climate is an undifferentiated attribute that is best conceptualized at the school level. The breaking apart of a construct that has long been conceived of at the school level is a significant development. It has implications for how related organizational features like community are conceptualized, and offers important new insights into the properties of education production processes.

Progress is also being made toward understanding the impact of curriculum on pupil performance through the use of highly disaggregated data. It has been shown, for example, that high school course taking behavior is related to educational outcomes, and that students who take more advanced courses in a given area perform at higher levels (Meyer 1988; Lee and Bryk 1988; Gamoran 1987). These studies employ relatively refined measures of the kind of curricular resources that flow directly to students. They are far removed from earlier and largely unsuccessful efforts that measured exposure crudely in terms of the broad measures of how much time students spent in school.

In addition, the courts have been showing increasing amounts of interest in the effects of differences in district expenditure levels on the actual provision of educational services for students (Benson, 1991). The so–called "third wave" litigation has become more prescriptive and has moved well beyond simple dollar valuations of inputs provided at the district level. Both the New Jersey (Abbott) Court and the Kentucky (Rose) Court, for example, assessed educational opportunities in fiscal terms as well as in terms of measures of services and programs available to children.

Within district resource allocation flows have also been at the center of recent controversies surrounding alleged mismanagement of educational systems. Cooper and Sarrel (1991) have been prominent among critics charging that school districts, particularly urban school districts, have devoted unconscionably high levels of resources to administrative and other non–instructional uses. A lively debate has developed over the validity of these criticisms.[7]

Equity/Fairness Concerns

There is a parallel, highly diverse set of policy issues where the focus is on equity or fairness in the distribution of educational opportunities. Here too we find a growing awareness of how important it is to obtain highly detailed measures of resource flows at disaggregated levels.

---

[7]Recent contributions to this debate include: Berne and Stiefel (1991); Fischer (1990); Fox (1987); Hayward (1988); Hess (1992); Hess and Monfiletto (1992); and Sherman (1984).

New York State's efforts to reform its public school system are also relevant. A Special Commission was formed in New York in 1993 to examine and make recommendations for the improvement of public education. This Commission carried out a major study of how internal school district spending practices have evolved in New York between 1979 and 1992.[8] While this report dealt with efficiency as well as equity issues, one of its most striking findings involved the rapid growth that has taken place in the funding of special education relative to other kinds of education. According to Lankford and Wyckoff's results, additional expenditures for disabled students totaled over a third of the increase in real per pupil expenditures between 1980 and 1992. The budget share devoted to "teaching–disabled" grew from 5.3 to 13.1 per cent during this period (Lankford and Wyckoff, 1993, p. 13–14). These findings raise a number of important equity (as well as productivity) issues which could not have been raised without detailed analyses of sub–school district resource allocation such as those conducted by Lankford and Wyckoff.

There have also been a number of recent school finance court decisions where the focus has been on equity at levels that are more disaggregated than is the custom in school finance litigation. For example, there was recent litigation in Los Angeles that focused on inequalities in spending levels among schools within the district (Rodriguez v. Los Angeles Unified School District, 1992). The agreement that was finally reached called for the district: (1) to equalize basic norm resources, teacher experience, and teacher training among schools; (2) to provide all students with maximum access to teachers with experience and training; and (3) to mitigate the consequences of limited teacher experience and training wherever equalization cannot be achieved. In addition, by the 1997-98 school year, all of the regular schools within the district are expected to receive an equal dollar amount per pupil (within $100 per pupil). Beginning in 1992-93, the district must assign the teachers with high levels of training and experience to schools in the lower third of faculty training and experience. The district must also develop a computer system which will permit school by school budgeting of resources. The settlement goes on to describe requirements for new school facilities, which even includes maximum capacities for playgrounds (e.g. 1.4 playground acres can handle only up to 500 students).

Consider also the on–going litigation in Texas where the courts have prompted an elaborate reform which permits wealthy districts to transfer wealth to poorer districts located elsewhere within the state. According to Senate Bill 7, a district whose property wealth exceeds a state established ceiling level, must take some combination of the following actions to achieve the targeted wealth level: (1) consolidate with another district; (2) detach property from the district and annex it to another district; (3) purchase attendance credits from the state; (4) contract for the education of nonresident students; or (5) make arrangements for tax base consolidation with another district (Clark, 1993). The constitutionality of Senate Bill 7 is currently under review.

---

[8]Lankford, Hamilton and James Wyckoff (1993). "Where Has the Money Gone?: An Analysis of School District Spending in New York, 1979-80 to 1991-92," A Report Submitted to the New York State Special Commission on Educational Structure, Policies and Practices.

Researchers are also beginning to examine resource inequalities across different areas of the curriculum. Oakes (1985, 1990) examined the differential allocation of resources to students within secondary schools, and drew attention to the effects of track placement on students' access to learning opportunities. Monk and Haller (1993) conducted a series of studies of the role school size plays in the allocation of resources to different areas of the secondary school curriculum. They examined divisions across both subject areas (e.g., mathematics versus English) and types of courses (e.g., remedial versus advanced). Recent efforts to develop indicators of school processes, sometimes called service delivery indicators, also promise new opportunities to depict resource inequalities within school districts and schools (e.g., Darling–Hammond 1992a, 1992b; Porter 1991; Shavelson, McDonnell, Oakes, Carey, and Picus 1987; and Stecher 1992).

What knits together this highly diverse set of studies on both the efficiency/productivity and equity/fairness sides of the policy divide is a concern over one of these public policy issues coupled with a growing realization that progress in the debate is aided by the availability and use of increasingly more refined and less aggregated measures of resource flows. It does not follow that greater disaggregation is always preferable to less, but it does seem clear that moving beyond gross district level depictions of resource flows offers many advantages.

III. Conceptual Issues

The Conception of a Resource Flow

We construe the term "resource" broadly to include all types of potentially productive inputs in educational contexts. In particular, the focus of this inquiry will not be restricted to the tracking of fiscal resources that lend themselves to dollar metrics. As one moves toward more micro–levels of schooling systems, the dollar metric becomes increasingly less applicable. Indeed, the logical culmination of this work is a series of case studies that permit analysts to follow resource flows beyond their last recorded presence in financial or other types of records.

We shall also recognize three broad dimensions along which resource allocation phenomena in education can be characterized. Specifically, we shall distinguish among the origination, disposition, and utilization of resources. As the discussion below makes clear, the chief difference between the disposition and utilization of resources involves a difference in the type of resource being allocated. Disposition pertains to the allocation of purchased and hired schooling resources while utilization involves the allocation of pupil time and effort and the attendant combination with teacher effort.

Origination of resources. New resources can enter the schooling system at any level of decision making. The conventional sources, of course, are Federal, state, and local tax revenues. In a system of fiscal federalism, ambiguities quickly arise over precisely what point each type of revenue enters, but it is clear that the resources enter at different levels and can carry different stipulations. The origin

itself can have implications for subsequent decisions that are made about the resources in question.

In addition to the conventional revenue sources (Federal, state, and local tax revenues), there are at least three additional sources of revenue that appear to be growing in their level of importance: (1) revenues coming to individual districts or schools from businesses, foundations, or other organized groups seeking to improve public education; (2) user fees and the proceeds of off–budget fund raising that some school districts are beginning to rely upon more heavily as conventional sources of revenues become more restricted; and (3) donated parental and community resources that are receiving so much emphasis within the school reform literature (e.g., Henry Levin's Accelerated Schools (Levin 1989, 1994), or James Comer's School Development Program (Comer 1980, 1988)).

Unfortunately, little is known about the size and nature of these new resource streams that are entering public school systems. Partly this is because they do not always appear on school district fiscal records.[9] It appears that a case study research methodology is required to even begin to estimate magnitudes of these less conventional revenue sources.

Disposition of resources. Before educational resources can flow, they need to be made available to students. We use the term "disposition" to refer to the decisions school officials and others make that give students access to resources. The results of these resource allocation decisions can be measured in many different ways and at many levels of the educational system.

At the district level it is possible to use established financial accounting categories to capture important aspects of the various resource disposition decisions that are made. In particular, resources can be traced according to the object, function, and program areas of school district budgets. Objects involve categories such as salaries, benefits, supplies and materials, equipment, and so forth; functions involve categories such as central administration, instruction, transportation, food services, and so forth. Programs usually pertain to categories of students. For example, there might be separate programs for special education students, or for gifted and talented students, or for students with limited English proficiency.

Of these three common divisions, the program area allocation is most problematic since assumptions need to be made about how to allocate broad categories of funds that are not divided on a program basis. For example, assumptions need to be made about how to divide a centrally provided service such as administration across various program areas. States vary in how much attention they pay to program–by–program allocations and there is no common agreement about how best to allocate the centrally provided services.

In contrast, the National Center for Educational Statistics has made progress in recent years toward promoting the use of a common set of object and

[9]This will be particularly true for the donated parental resources and perhaps user fee revenues. Grants from businesses are presumably accounted for within conventional financial records.

function definitions. The use of these common definitions adds significantly to the potential for analysts to make meaningful cross–state comparisons of resource allocation behaviors within Local Education Agencies.

Personnel data can also be used to gain insight into resource allocation behaviors within schools. A number of states collect detailed information about individual teacher's teaching assignments, and these data can be used to create a district or school profile of how teaching resources are being deployed. It is possible, for example, to calculate the percentage of teaching assignments in a secondary school that are devoted to, say, the mathematics area of the curriculum. These curricular allocations can provide important insights into programmatic decisions that are made within districts and schools. They also permit the analysis of the interface between district and school level resource allocating behaviors. For example, in a large district, the curricular divisions of individual schools can be created and compared with district aggregates[10]. These curricular analyses using personnel data provide a valuable complement to program by program analyses of how district financial resources are allocated.

It is also possible to use curricular resource disposition data to generate insight into important phenomena such as the accessibility of curricular opportunities for students, or what Porter has called the "enacted curriculum" (Porter, 1991). For example, these data can be used to measure the incidence of single section offerings (often called singletons) within a school's curriculum. Our presumption is that when all else is equal, the incidence of singletons is a good indicator of curriculum inaccessibility. It is also possible to use teacher assignment data to calculate indicators of a school's willingness to provide relatively specialized curricular opportunities. The percentage of classes offered by a school with 10 or fewer students could be a revealing indicator of specialized course availability.

Utilization of resources. Before an educational resource can be utilized there needs to be an allocation of students' time. It is when resources are utilized that they can be said to "flow." The disposition of a resource is a necessary but not a sufficient condition for a resource flow to occur.

School officials have limited but real involvement at the utilization phase of the resource allocation process. For example, they may be deeply involved in scheduling decisions, and they can play an important role in providing guidance to students about course, track, and program selections. But it is clear that students themselves play perhaps the most important role in terms of the actual utilization of resources since they have ultimate say over the availability of their time, interest, and commitment to the educational activities they encounter.

These student–made decisions constitute a large and complex area for research, and we shall not deal directly with it in this study. Instead, we shall rely upon data that reveal the results of the decisions that are made about the

[10]For some preliminary analyses using personnel data collected at the site level, see Brent and Monk (1995).

allocation of students' time and effort. These data will permit us to place the results of our resource disposition analyses into an insightful context.

More specifically, we shall juxtapose the results of our teacher resource distribution analyses with data describing the allocation of students across areas of the curriculum. Knowing that 12% of the teaching resources in a high school are devoted to mathematics instruction, for example, needs to be examined in light of the proportion of student–hours similarly devoted to the subject. In addition, we develop indicators of students' access to particular curricular opportunities. For example, we measure on a school specific basis the proportion of students studying advanced mathematics, regular mathematics, remedial mathematics, etc. We also construct overall pupil load indicators across the core subject areas. Our goal is to assess how much these type of utilization indicators vary across schools and to make progress toward understanding the origins of whatever variation there might be. Class–specific enrollment information will be the basis for these comparisons. Actual attendance information, collected at the site level, may also be of value, since it will provide direct insight into decisions pupils make about their supply of time to their studies.

While we have distinguished sharply between the disposition and utilization aspects of the resource allocation process, it is clear that these two types of phenomena can be closely linked. Students' willingness (both real and perceived) to utilize resources can have strong effects on disposition decisions. Similarly, students' responses are likely to be sensitive to the types of resources that are made available. We are at an early stage in our efforts to disentangle and understand the interplay between various aspects of the internal resource allocation process.

The Choice of Predictor Variables

We are interested in estimating relationships between a set of school district structural characteristics and the indicators are have developed of internal resource allocations. We have chosen four types of structural attributes. First, there several different measures of school districts' fiscal position. In particular, we have singled out measures of school districts' real property and income wealth on a per pupil basis. These are classic measures of school district fiscal capacity, and our interest in their effects on spending grows out of the longstanding equity concerns within educational finance. Conventional school finance equity studies examine relationships between school district fiscal capacity and overall spending levels. Here, we seek to extend the analysis to include the effects of various aspects of fiscal capacity on internal resource allocation behaviors.

Second, for similar reasons, we are interested in relationships between various measures of school districts' socio–economic status and resource allocation practices. The variable we have chosen for these analyses is the incidence of students qualifying for free and reduced price lunches (the FRPL count). The purpose of these analyses is to understand the effects of concentrations of poverty on resource allocation behaviors. Poverty concentration measures are becoming increasingly popular measures of district

need for additional funding. The New York State Board of Regents has proposed to pay "extraordinary needs aid" on the basis of a poverty concentration indicator. Similarly, the Clinton administration's proposal for the reauthorization of Chapter 1 funding involves placing a greater emphasis on concentration indicators.

Third, policymakers are often interested in how districts spend marginal dollars since reform efforts often result in an influx of new resources to school districts. This policymaking concern prompts our interest in estimating relationships between school district per pupil spending levels and their internal resource allocation practices. In this paper we compare high with low spending districts. In future work we plan to conduct longitudinal analyses that will permit the direct examination of how districts spent the additional resources that were made available to them.[11]

Fourth, we are interested in the effects of school district size. This interest is motivated by economic theories of scale in addition to previous research on the topic. There is an on–going lively policy debate surrounding the nature of scale economies in education and their implications for district and school organizational structure (Monk and Kadamus, in press). Most of the existing studies place emphasis on district–level aggregates. Here we extend the analyses to examine the internal effects of district size on resource allocation behaviors.

In addition to the examination of bivariate relationships between these structural attributes and our resource allocation indicators, we are also interested in assessing a series of interaction effects. Specifically, we want to examine whatever differences there might be in the effects of spending levels on internal resource allocation practices for wealthy compared to poorer school districts.

IV. Data and Methods

Our strategy is to focus on a single state and begin with the fiscal data base that is available. Recall that this is one part of a larger multi–state effort within the CPRE research program. The focus here is on New York. New York was chosen because of the relatively well developed nature of its data base and because it typifies a highly regulated, high spending state. The other states that were chosen were Florida, California, and Minnesota.

We have restricted our analysis to "regular" K–12 school districts in New York by excluding operating institutional school districts, special residential school districts and those districts operating only an elementary or secondary program. These exclusions left us with a population of 645[12] districts plus the Big Four city districts (Buffalo, Rochester, Syracuse, and Yonkers) plus New York City. Our analyses are based on data collected by the New York State Education

---

[11]The Lankford and Wyckoff (1993) study includes longitudinal analyses of this type. We plan to extend their work to look more intensively at more disaggregated indicators. We are especially interested in conducting longitudinal analyses of the curriculum allocation data specified at the individual school level.

[12]In our earlier paper (Monk and Roellke, 1994) we reported a sample size of 648. We have since discovered three districts that were incorrectly considered "regular K-12" in the earlier report.

Department (SED) for the 1991–92 school year. The School Financial Master File (SFMAST), the Institutional Master File (IMF) and the Personnel Master File (PMF) of the Basic Education Data System (BEDS) were used for revenue, expenditure, enrollment, and staffing information. Figures reflecting the percentage of pupils qualifying for free and reduced price lunch (FRPL), property wealth per pupil and income per pupil came from the State Education Department's education finance research data base.

Readers interested in the origination of New York resources for education as well as the disposition of fiscal resources across school districts should obtain a copy of our earlier paper (Monk and Roellke, 1994). Readers interested in the disposition of human resources across administrative units and elementary and secondary schools should obtain a copy of our earlier staffing analyses (Monk and Roellke, 1995). The findings we report here will be focused on the allocation and use of professional teaching personnel within secondary schools. Particular attention is given to the distribution of teacher resources across the "core" curricular areas of secondary schools. We define "core" to include: English, Mathematics, Science, Social Studies, and Foreign Language.

Within these core subject areas, we differentiate between "advanced," "regular," and "remedial" type offerings. We relied on the course titles listed in the assignment code manual of the Basic Educational Data System (BEDS) to determine the type of course offering. We counted as advanced courses those subjects described in the manual as "advanced," "honors," "accelerated," or "college-credit." We counted as remedial those courses described as: "basic," "remedial," "practical," "developmental," or "corrective" (not special education). In those cases in which the type of offering could not be determined by the course title, we relied on teachers' descriptions of the type of pupils within the class. If the teacher reported a homogeneous class of "advanced placement" or "honors" pupils, we counted that offering as advanced. Heterogeneous classes with generic course titles were counted as regular offerings.

In our within school disposition analysis, we report findings in two ways. First, we calculated full–time equivalent teacher staffing levels on a per 1,000 district pupil basis. For example, we calculated the number of secondary (grades 7–12) mathematics teachers per 1,000 pupils in the district. These per 1,000 pupil indicators provide insight into the intensity of resources that are made available within the school. We then consider the degree to which these intensities are related to background structural features such as district spending levels, district size, district property wealth, and district income wealth.

Inequalities in these subject–specific resource intensities can arise from two sources: (1) there can be differences in the size of the overall pool of resources; or (2) there can be differences in how districts divide a given pool of resources across the various competing sub–units, in this case subject areas. For example, we might find a large difference in the teacher resources devoted to mathematics in two districts. The difference might be due to the fact that the two districts have different sized pools of resources to allocate; or, they might have the same pool to work with but decide to divide it in very different ways.

Given our interest in internal resource allocation practices, it is important to examine directly the decision to divide the pool of resource in one fashion rather than another. To this end, we introduce a second type of resource allocation indicator that looks exclusively at the share of the available pool that is allocated to each area of the curriculum. Thus, for each area of the curriculum we provide the staffing level per 1,000 pupils plus the percentage share of the teaching resource pool that the subject area receives.

To address our interest in the utilization of resources, we make a similar calculation of the pupil–time resource. In other words, we generate a series of subject–specific indicators that tell us the percentage of the pool of student–time resource that is devoted to each area of the curriculum.

With these two share indicators in hand it becomes possible to generate an index of resource utilization. In this report, we have relied upon a ratio of the two percentages as our measure of resource utilization. The teacher resource share appears in the numerator of the ratio, so a figure of 1.3 for a given subject area suggests that 30% more teacher resources than pupil resources are devoted to the subject in question. Thus, low readings on this indicator suggest that the teacher resource in question is facing relatively heavy demands.

Another indicator of resource utilization is overall pupil load per full-time-equivalent teacher. We constructed this indicator by calculating the number of pupils enrolled in advanced, regular and remedial courses and dividing these totals by the number of full-time-equivalent teachers allocated to those areas of the curriculum. Again, this type of indicator can provide insights into the level of demand faced by teachers in

Our "per 1,000 pupil" results are presented for the whole state (minus the big 5 cities) as well as for quintiles that are based on the district structural characteristics described earlier. In particular, we present quintile breakdowns for the following district attributes: a) spending level; b) real property wealth per pupil; and c) income per pupil. In addition, we present breakdowns that are not based on pupil quintiles for: a) district size and b) the incidence of pupils in poverty. For these non–quintile analyses we chose cut–points with policymaking significance that could also apply across the 4 states participating in the larger study. The spending level is total district expenditures per pupil. District property wealth is selected full value per total weighted pupil unit (TWPU). Percent of pupils in poverty is determined by the percentage of students in the district who qualify for free and reduced price lunch (FRPL count). Within each category of analysis, where appropriate, we present data for the state average and for pupil quintiles. Quintile distributions reflect pupil counts, not district counts. That is, quintiles are constructed so that approximately one–fifth of the pupils in the state (excluding the Big Four and New York City) are contained within each quintile. We present the average results for each quintile where the average is weighted by the number of pupils in each district.

V. Findings

Disposition Findings: Resource Intensity Levels

State Aggregates

The far right column of Table 1A presents the "per 1,000 pupil" indicator results for the entire state (less the big 5 city districts). We find that the resource intensity among the core subject areas is highest for English (5.48 teachers per 1,000 district pupils) and lowest for Foreign Language (2.55 teachers per 1,000 district pupils). Of the core areas, mathematics has the highest resource intensity level for both advanced and remedial offerings (.45 and .96, respectively). Staffing commitments to regular offerings within the core account for 17.60 of the 21.10 full time equivalent teachers within the core subject areas.

The Big Four and New York City

Table 1A also presents the "per 1,000 pupil" indicator results for the Big Four (Buffalo, Rochester, Syracuse, Yonkers) and New York City. Over 40% of the pupils in the State are contained within these urban areas, with over 36% residing within New York City alone. These findings indicate substantial differences in resource intensity levels between these big cities and the remainder of the State. Particularly noteworthy is the low resource intensity level in the core areas in New York City. In the core subject areas on the secondary level, New York City employs nearly three less professional staff members per 1,000 pupils than their Big Four counterparts and over six less staff members than the State average. Also note the relatively high staffing commitments to remedial mathematics in the Big Four and New York City (1.20 and 1.10, respectively).

Table 1A About Here

Quintile Breakdowns

Spending levels. The Table revels a remarkable degree of consistency across the spending quintiles in overall staffing commitments to the core subject areas, with the exception of the highest spending group of districts. For example, English receives between 5.20 and 5.43 teachers per 1,000 pupils until the 5th quintile is reached where the figure jumps to 6.10. Similar jumps can be observed in the other subject areas as well. The flatness of the profiles in overall staffing commitments until the highest spending quintile is interesting. It suggests that as spending levels rise through the 4th quintile, the resources are devoted either to salary increases for existing staff or to other non–personnel uses. In our earlier work (Monk and Roellke, 1994) we found steady salary increases over the five quintiles. Something significant appears to be happening within the districts at the top spending levels.

There is a noteworthy departure from the tendency for the profiles to be flat across the lower 4 spending quintiles. As spending increases, staffing

commitments to the advanced areas of the curriculum also increase. Staffing commitments to advanced courses are nearly three times as great in the highest spending districts than the lowest spending districts (2.55 vs. .88).

Table 1B About Here

District size. Table 1C shows that there are relatively high staffing per pupil levels in the smallest districts. Staffing commitments to the core area of the curriculum steadily decline as district size increases. The refined subject area breakdowns reveal interesting trends: as district size increases, staffing commitments to advanced types of courses increase and commitments to regular and remedial types of courses decrease. While staffing commitments are high in the smallest districts, relatively modest commitments are made to advanced courses within the core subject areas.

Table 1C About Here

Property wealth. The property wealth quintile breakdowns differ in an interesting way from what we found for the spending breakdowns. In particular, the lowest wealth districts tend to report higher staffing levels in many of their subject areas than do the districts in the next highest wealth levels. Recall that the expenditure breakdowns were characterized by remarkably flat profiles across the lower 4 spending quintiles. These higher staffing levels for the poorest districts may stem from the wealth equalized resource flows from state and Federal sources. However, it is important to note that while the staffing levels are higher for the poorest districts relative to other districts at the lower end of the poverty distribution, they remain substantially below the staffing levels shown for the wealthiest districts in the state. Also note that as wealth increases, staffing commitments to advanced areas of the curriculum also increase. Conversely, as wealth increases, staffing commitments to remedial areas of the curriculum decrease.

Table 1D About Here

District income. The income breakdown is quite similar to the property wealth breakdown. The districts falling into the lowest quintile report (in many of the subject areas) somewhat higher staffing levels than do the districts falling in the next highest income quintile. Moreover, we see again the jump between the 4th and 5th quintiles in overall resource intensity and similar trends regarding advanced and remedial areas of the curriculum. As income wealth increases, resource intensity in the advanced areas increases and resource intensity in the remedial areas decreases.

Table 1E About Here

Poverty. The breakdowns by FRPL count are somewhat problematic given the uneven distribution of the districts across the cutpoints we have agreed

upon as part of the multi–state CPRE effort. Notice that the highest poverty grouping contains only 4 districts. In general, the results show more of a steady inverse relationship between staffing levels and poverty than was found in the earlier breakdowns. In other words, there is less of a jump at the low poverty level, and the relatively high staffing levels in the lowest property wealth and lowest income districts can not be easily discerned in the highest poverty districts. However, we suspect this is due primarily to the fact that the poverty breakdowns do not provide even rough approximations of pupil quintiles.

Table 1F About Here

Disposition Findings: Percentage Shares of Teacher Resources

We observed differences in the level of subject specific teacher resource intensity in the first set of tables. These differences can arise from two sources: (1) differences in the magnitude of the overall pool of resources the schools have access to; and (2) differences in how the respective pools of resources are divided among the various subunits, in this case subject areas. The "Total Core" row headings in Tables 1A–1F provide insight into differences across the quintiles in the size of the available pools of resources. Here, our focus shifts to the percentage distribution of each district's pool regardless of its overall size. The columns labeled TT (teacher time) in Tables 2A–2F provide this information.

State Aggregates

Table 2A reports information about the percentage share distribution of teacher resources across core curricular areas for all of the regular K-12 districts (excluding the 5 big city districts) in the State as a whole. This information appears under the TT (teacher time) heading of the Table.

Table 2A About Here

These are revealing statistics and invite questions about why the distribution takes the form that it does. Why, for example, does English receive the largest percentage share, on average, of any of the core curricular areas we have defined? Why do remedial English and remedial Mathematics receive high percentage shares (2.48% and 2.79%) compared to remedial Science which receives only (.14%)? Such questions are much easier to ask than to answer, and we shall not attempt to resolve these matters here. The data permit us to frame the questions, and we are confident that the questions in themselves will prompt a useful debate. The data also permit us to examine correlates of the percentage shares, the topic we turn to later in this paper.

The Big Four and New York City

Table 2A also provides the breakdowns for the Big Four city districts and New York City. The percentage share committed to the core areas in the big

cities is substantially lower in these districts than the State average. Statewide, 61.10% of the teacher resource is devoted to the core while this share is less than 50% in both the Big Four and New York City (49.49% and 46.89%, respectively). Also note that percentage shares devoted remedial curricular offerings is slightly greater in the big cities than in the State as a whole. Conversely, the percentage share devoted to advanced offerings is slightly lower in the big cities than the State average.

Quintile Breakdowns

Table 2B About Here

District spending. Table 2B shows that the overall percentage shares for most of the core areas either decline or remain fairly constant as spending per pupil increases. There does appear to be a positive relationship between district spending and percentage shares devoted to advanced areas of the curriculum. Note that in the lowest spending districts the percentage share for advanced areas is lower than the percentage share devoted to remedial areas (2.82% and 6.36%). The reverse is true in the highest spending districts where we find higher percentage shares devoted to advanced areas rather than remedial areas.

District size. Considerable inconsistency characterizes the behavior of overall core subject matter shares of teacher resources as district size changes. Table 2C shows, for example, that in areas such as Mathematics, there are negative relationships between district size and subject areas' respective teacher resource shares. There are no discernible trends in the overall percentage shares of the other core areas. In examining the core by refined subject area, however, we find interesting trends regarding advanced and remedial offerings. Positive relationships can be seen between district size and percentage shared for advanced areas of the core curriculum. We find a negative relationship between district size and percentage shares devoted to remedial areas of the core.

Table 2C About Here

Perhaps the explanation for this variability lies in the degree to which diseconomies of small size vary across subject areas. Some subjects or instructional approaches may be more vulnerable to these diseconomies than are others, and the result may be additional demands for resources to meet the higher unit costs that these diseconomies generate. For example, negative relationships can be seen for remedial areas of the core curriculum. It may be that remedial types of courses are especially prone to small size diseconomies and that small districts meet these extra costs by supplying larger shares of resources than would ordinarily be the case.

Property wealth and income. The quintile breakdowns for property wealth and income reveal quite similar results (Table 2D and Table 2E). As was the case with the spending quintiles, we find inconsistencies in the overall percentage shares in the core areas as district wealth increases. Specifically, English and Mathematics tend to receive smaller teacher resource shares as the property

wealth or income level of the district increases. The relationship appears to be different for Science and Social Studies where there is no discernible trend. Foreign Language is a core subject that receives unambiguously larger teacher resource shares as the fiscal capacity of the district increases. We find a positive relationship between fiscal capacity and percentage shares devoted to advanced offerings within the core. We find a negative relationship between fiscal capacity and percentage shares devoted to remedial offerings within the core.

Tables 2D and 2E About Here

Poverty. Table 2F provides the breakdowns by the incidence of impoverished families and reveals some interesting departures from what the district fiscal capacity breakdowns showed. For example, share of teacher resources devoted to English increases or remains steady with the poverty indicator until the final grouping where the share drops significantly. In Science there is a steady decline in the overall share as the incidence of poverty increases. In Mathematics, the share increases and then decreases as poverty increases. The same can be said for the Social Studies share. Foreign Language shares decrease until the highest level of poverty where the share makes a small gain. As was the case with the spending and wealth quintiles, we find interesting trends in the advanced and remedial offerings within the core. Lower percentage shares are devoted to advanced offerings as the incidence of pupils in poverty increases. Higher percentage shares are devoted to remedial offerings as poverty increases.

Table 2F About Here

Utilization Findings: Percentage Ratios

In addition to the percentage share distributions of teacher resources across subject areas, Tables 2A–2F provide information about the distribution of students' time. These findings appear under the PT (pupil time) headings in these tables. We calculated the total number of pupil–hours that were spent within each of the high schools studied and then apportioned this total across the subject areas in accordance with the pupil enrollment data that was available to us using the state data tapes.[13] By comparing the percentage shares of teacher and student resources devoted to particular areas of the curriculum, we hope to gain insight into the nature of how these resources are utilized in schooling settings. The TT/PT (teacher time/pupil time) columns report this information.

State Aggregates

[13] Inspection of the reporting of pupil counts showed that some teachers reported implausible numbers of students. Despite the obvious methodological problems associated with the approach, some filtering out of these suspect cases seemed essential. We developed a set of decision-making rules to flag (and subsequently remove from the pupil count analysis) those teachers whose pupil loads could be consistently identified as implausible.

Information about the utilization indices for all of the K-12 districts in the State (with the exception of the 5 big city districts) appears in the far right column of Table 2A under the TT/PT heading. There are several striking results. First, the highest indices occur without exception in the remedial offerings within the core. The average utilization ratio for all remedial offerings within the core is 1.59. A value 1.59 suggests that the supply of teacher resource is 159% larger than the supply of student resources to the curricular area in question. The other areas of the curriculum where the teacher resource share tends to exceed that of the student resource are advanced Science and advanced Foreign Language.

The fact that some teacher resource shares are larger than the corresponding student resource share suggests that there will be balancing subject areas where the opposite will be true. Table 2A indicates that part of this balancing occurs in regular offerings within the core.

As was the case for the statewide aggregates for the Teacher Resource distribution, these findings invite many questions. Recall that English received the highest allocations of teacher time resources. But English also receives the highest allocations of student time resources. Why, on balance, does the supply of teacher resources in the core academic courses fall short of pupil demand? And, of course, how appropriate and justifiable are the high indices recorded for courses in the remedial areas of the core curriculum? Again, these questions are far easier to ask than to answer. The findings help to frame useful questions. The challenge is to use the questions as the basis of a fruitful debate.

The Big Four and New York City

The utilization findings for the big cities are also reported in Table 2A. The utilization indices for the overall core subject areas in both the Big Four and New York City are substantially lower than the State average. While the supply of teacher resources in the core academic courses falls short of pupil demand in the State as a whole (overall utilization index of .92), this shortfall is more substantial in the Big Four and in New York City (index of .82 and .77, respectively). It is noteworthy that only in New York City do we find a utilization ratio of less than one for total remedial offerings within the core. This suggests a relatively high demand for remedial courses within New York City.

Quintile Breakdowns.

Tables 2B - 2F also provide utilization findings by district type. While there are some differences across the quintiles, for the most part these are quite modest. Indeed, it is remarkable to observe how similar the utilization indices are for districts that vary quite dramatically in terms of their spending, property wealth, income levels, and incidence of pupils living in poverty. The real differences revealed by these data lie across the subject areas regardless of what kind of district is being considered.

Utilization Findings: Overall Pupil Demand

Finally, we turn to a set of analyses that are intended to gain additional insight into how teacher resources are utilized by students. We calculated the overall pupil demand per full time equivalent teacher in each of the five core subject areas. Findings are also reported for the advanced, regular and remedial offerings within the core.

State Aggregates

Overall pupil load findings for the entire State (minus the big city districts) appear in Table 3A. The overall pupil loads range from a low of 35.61 pupils per teacher in remedial Science to a high of 110.97 pupils per teacher in regular Social Studies. Of the core subject areas, the lowest overall pupil load is found in Science (89.99) and the highest is found in Social Studies (109.13). Of the remedial offerings within the core, remedial Mathematics has the highest pupil load per teacher (59.70). Of the advanced offerings within the core, advanced Social Studies has the highest pupil load per teacher (102.28).

Table 3A About Here

The Big Four and New York City

Table 3A also provides the overall pupil load findings for the big cities. There are several striking results. First, the average pupil load per teacher in the core areas is substantially greater in the big cities than in the State as a whole. This is particularly true for New York City where the overall load is over 34 pupils greater than the State average. In New York City, the only subject areas in which the overall pupil load is less than 100 pupils per teacher are remedial English, remedial Mathematics, and remedial Science. The overall pupil load in New York City reaches a high of 139.60 in Foreign Language. Also note that the average load in the advanced areas of the core is over 38 pupils greater in New York City than the State average and the average remedial load is nearly 43 pupils greater.

Quintile Breakdowns

Tables 3B - 3F provide overall pupil load findings by district type. While there are some differences across the quintiles, for the most part these are quite modest. Indeed, it is remarkable to observe how similar the utilization indices are for districts that vary quite dramatically in terms of their spending, property wealth, income levels, and incidence of pupils living in poverty. There are some unambiguous and interesting trends in the district size quintiles (Table 3C). As district size increases, the overall pupil load in virtually all of the core areas increases. This holds true for most advanced, regular and remedial offerings as well.

VI. Discussion

Given the on–going nature of this research, we shall not attempt to interpret and draw conclusions about these findings. The results of these staffing analyses need to be placed in the broader context of the earlier more macro analyses of how fiscal resources are distributed across districts. In addition, these results need to be compared with the findings in the other states that are a part of the CPRE research effort.

However, we shall offer a few observations about how the various pieces of the analyses reported here fit together. Recall that in English we found that the resource intensity level was flat across spending levels until you reached the highest spending districts where the intensity level rose. We also found a negative relationship between the share of teacher resources devoted to English and district spending levels. Collectively, these results suggest that initially the new resources being spent by the higher spending districts just balance the shifting of resources away from English so that the resource intensity level stays more or less constant, and that ultimately (among the highest spending districts) the influx of new resources swamps the continuing tendency to shift away from English so that in the net there is a rise in the resource intensity for English.

An alternative (although not necessarily inconsistent) explanation involves the claim that the new resources being spent by the higher spending districts are devoted primarily to teacher salaries or non–personnel uses, and that this changes at the highest spending districts into a willingness to add staff.

An unambiguous and striking finding in this analysis is that professional staffing levels in the core subject areas within the big cities of the State are substantially lower than the State average. This low resource intensity level is particularly prevalent in New York City. It should be noted that this analysis is limited to professional staff only. One possible explanation for the low professional staffing levels in the big cities is the use of para-professionals and classroom aides in place of certified teachers.

We are currently engaged at expanding and interpreting these analyses of the internal allocation of resources for education. We are also continuing to work on the case studies that will further complement the findings. We are impressed with the insights being offered by this line of analysis and we look forward to the next steps in the project.

VII. References

Allington, Richard L. and Anne McGill–Franzen (1992). "Unintended Effects of Educational Reform in New York," Educational Policy 6,4: 397–414.

Barr, Rebecca and Dreeben, Robert (1983). How Schools Work. Chicago: University of Chicago Press.

Benson, Charles S. (1991). "Definitions of Equity in School Finance in Texas, New Jersey, and Kentucky," Harvard Journal on Legislation 28, 2: 401–422.

Berne, Robert and Leanna Stiefel (1993). "Cutback Budgeting: The Long Term Consequences," Journal of Policy Analysis and Management. 12,4: 664–684.

Brent, Brian O. and Monk, David H. (1995). "The Distribution of Resources Within New York State Public School Systems: A Product Costing Model," paper presented at the annual conference of the American Educational Research Association, San Francisco, CA.

Clark, Catherine (1993). "The Texas School Finance Melodrama," Proceedings of the 82nd Annual Conference of the National Tax Association. 28-31.

Coleman, James S. (1988). "Social Capital in the Creation of Human Capital." American Journal of Sociology 94: S95–S120.

Coleman, James S. (1991) "Parental Involvement in Education." U. S. Department of Education. Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402 (Order # 065–000–00459–3).

Comer, James P. (1980). School Power. New York: Free Press.

Comer, James P. (1988). "Educating Poor Minority Children." Scientific American 259,5: 42–48.

Cooper, Bruce S. and Robert Sarrel (1991). "Managing for School Efficiency and Effectiveness: It Can Even Be Done in New York City," National Forum of Educational Administration and Supervision Journal, 8,3: 4–17.

Darling–Hammond, Linda (1992a). "Educational Indicators and Enlightened Policy," Educational Policy 6,3: 235–265.

Darling–Hammond, Linda (1992b). "Creating Standards of Practice and Delivery for Learner–Centered Schools." Paper prepared for the New York State Equity Study Group for Elementary, Middle, and Secondary Education.

Fischer, Michael. 1990. "Fiscal Accountability in Milwaukee's Public Elementary Schools, Where Does the Money Go?" (Wisconsin Policy Research Institute, Milwaukee"

Fox, James N. (1987). "An Analysis of Classroom Spending: Or Where Do All the Dollars Go?" Planning and Changing 18,3: 154–162.

Gamoran, Adam (1987). "The Stratification of High School Learning Opportunities." Sociology of Education. 60: 135–55.

Gamoran, Adam (1993). "Alternative Uses of Ability Grouping in Secondary Schools: Can We Bring High–Quality Instruction to Low–Ability Classrooms?" American Journal of Education. 102,1: 1–22.

Hallinan, Maureen T. and Sorensen, Aage B. (1985). "Class size, Ability Group Size, and Student Achievement." American Journal of Education. 94,1: 71–89

Hanushek, Eric A. (in press). "The Trade–Off Between Child Quantity and Quality." Journal of Political Economy.

Hanushek, Eric A., Joao Batista Gomes–Neto, and Ralph W. Harbison (1992). "Self–Financing Educational Investments: The Quality Imperative in Developing Countries" typescript, University of Rochester.

Hayward, Gerald C. (1988). "The Two Million Dollar School." Policy Paper No. PP88–5–5, Policy Analysis for California Education, University of California, Berkeley.

Hess, G. Alfred Jr. (1992). "Reorienting A School District's Funding Priorities By State Mandate," paper prepared for the annual conference of the American Education Finance Association, New Orleans, La.

Hess, G. Alfred Jr. and Tony Monfiletto (1992). "Assessing and Correcting Intradistrict Funding Inequities," paper prepared for the annual conference of the American Education Finance Association, New Orleans, La.

Hoenack, Stephen A. (1988). "Incentives, Outcome–Based Instruction, and School Efficiency." in David H. Monk and Julie Underwood, eds., Microlevel School Finance. (Cambridge, MA: Ballinger). pp. 113–142.

Lee, Valerie E. and Bryk, Anthony S. (1988). "A Multilevel Model of the Social Distribution of High School Achievement." Sociology of Education. 60: 172–92.

Levin, Henry M. (1989) "Financing the Education of At–Risk Students" Educational Evaluation and Policy Analysis. 11,1: 47–60.

Levin, Henry M. (1994). "The Necessary and Sufficient Conditions for Achieving Educational Equity", in Robert Berne and Lawrence Picus (eds.) Outcome Equity in Education. Newbury Park, CA: Corwin Press.

Meyer, Robert H. (1988). "Applied versus Traditional Mathematics: New Econometric Models of the Contribution of High School Courses to Mathematics Proficiency." Forthcoming as a Discussion Paper from the Institute for Research on Poverty, University of Wisconsin at Madison (October 1991).

Monk, David H. (1994). "Incorporating Outcome Equity Standards into Extant Systems of Educational Finance," in Robert Berne and Lawrence Picus (eds.) Outcome Equity in Education. Newbury Park, CA: Corwin Press.

Monk, David H. (in press). "The Content Preparation of Secondary Mathematics and Science Teachers and Pupil Achievement," Economics of Education Review

Monk, David H. and Emil J. Haller (1993). "Predictors of High School Academic Course Offerings," American Educational Research Journal. 30,1: 3–21.

Monk, David H. and James A. Kadamus (in press). "The Reform of School District Organizational Structure: New York's Experimental Use of a Collaborative Study Process," in William J. Fowler, Benjamin Levin, and Herbert Walberg (eds.) Organizational Influences on Educational Productivity. Greenwich, CT.: JAI Press.

Monk, David H. and Jennifer King (1994). "Multi–Level Teacher Resource Effects on Pupil Performance in Secondary Mathematics and Science: The Role of Teacher Subject Matter Preparation," in Ronald G. Ehrenberg (ed.) Contemporary Policy Issues: Choices and Consequences in Education. Ithaca, New York: ILR Press.

Monk, David H. and Christopher Roellke (1994a). "The Origins, Disposition, and Utilization of Resources Within New York State Public School Systems: A Progress Report," paper presented at the annual conference of the American Educational Finance Association, Nashville, TN.

Monk, David H. and Christopher Roellke (1995). "The Origins, Disposition, and Utilization of Resources Within New York State Public School Systems: An Update," paper presented at the annual conference of the American Educational Finance Association, Savannah, GA.

Nakib, Yasser A. (1995). "Beyond District Level Expenditures: Resource Allocation and Use in Florida's Public Schools," paper presented at the annual meeting of the American Education Finance Association, Savannah, GA.

Oakes, Jeannie (1985). Keeping Track: How Schools Structure Inequality. New Haven, CT.: Yale University Press.

Oakes, Jeannie (1990). Multiplying Inequalities: The Effects of Race, Social Class, and Tracking on Opportunities to Learn Mathematics and Science. The RAND Corporation: Santa Monica, Calif.

Pallas, Aaron. (1988). "School Climate in American High Schools." Teachers College Record. 89:541–53.

Picus, Lawrence O., Tetreault, Donald R. and Hertert, Linda (1995). "The Allocation and Use of Educational Resources in California," paper presented at the annual meeting of the American Education Finance Association, Savannah, GA.

Porter, Andrew C. (1991). "Creating a System of School Process Indicators," Educational Evaluation and Policy Analysis. 13,1: 13–30.

Rodriguez et al, v. Los Angeles Unified School District, et al. (1992). Consent Decree, No. C 611358, May 5.

Rowan, Brian, Stephen W. Raudenbush, and Sang Jin Kang (1991). "Organizational Design in High Schools: A Multilevel Analysis" American Journal of Education. 99,2: 238–270

Shavelson, R., McDonnell, L., Oakes, J., Carey, N., and Picus, L. (1987). Indicator Systems for Monitoring Mathematics and Science Education. RAND, R–3570–NSF. August.

Sherman, Joel D. (1984). "Resource Allocation and Staffing Patterns in the Public Schools: 1959–60 To 1983–84" Pelavin Associates, Inc.

Slavin, Robert E. and Nancy A. Madden (1991). Modifying Chapter 1 Program Improvement Guidelines to Reward Appropriate Practices," Educational Evaluation and Policy Analysis. 13,4: 369–379.

Slavin, Robert, N.A. Madden, N.L. Karweit, B.J. Livermon, and L. Dolan (in press) "Success for All: First–year Outcomes of a Comprehensive Plan for Reforming Urban Education." American Educational Research Journal.

Stecher, Brian M. (1992). Describing Secondary Curriculum in Mathematics and Science: Current Status and Future Indicators. RAND N–3406–NSF, Santa Monica, CA.: The RAND Corporation.

Table 1A
Secondary School (7-12) Instructional Staffing Patterns
(Number of FTE Professional Staff per 1,000 District Pupils)
Big 4 City Districts, New York City and State Totals

Staffing Category	Big 4 City Districts n=4	New York City n=1	State Totals n=645
English Total	4.49	3.67	5.48
Advanced English	0.27	0.22	0.33
Regular English	3.29	2.70	4.29
Remedial English	0.94	0.75	0.86
Math Total	4.18	3.52	4.65
Advanced Math	0.29	0.23	0.45
Regular Math	2.70	2.19	3.25
Remedial Math	1.20	1.10	0.96
Science Total	3.03	2.39	4.23
Advanced Science	0.21	0.19	0.34
Regular Science	2.80	2.17	3.84
Remedial Science	0.02	0.03	0.05
Social Studies Total	3.22	2.66	4.19
Advanced Social Studies	0.30	0.20	0.29
Regular Social Studies	2.87	2.40	3.81
Remedial Social Studies	0.05	0.06	0.10
Foreign Language	1.50	1.41	2.55
Advanced Foreign Lang.	0.11	0.09	0.13
Regular Foreign Lang.	1.40	1.31	2.42
Remedial Foreign Lang.	0.00	0.00	0.00
Total Advanced	1.18	0.93	1.55
Total Regular	13.05	10.78	17.60
Total Remedial	2.21	1.94	1.96
Total Core	16.44	13.65	21.10

Note: Figures are weighted by district enrollment.

Table 1B
Secondary School (7-12) Instructional Staffing Patterns
(Number of FTE Professional Staff per 1,000 District Pupils)
By District Spending Level

Staffing Category	Q1 *n=87*	Q2 *n=147*	Q3 *n=167*	Q4 *n=117*	Q5 *n=127*	Total *n=645*
English Total	5.20	5.25	5.43	5.31	6.10	5.48
Advanced English	0.18	0.26	0.25	0.38	0.50	0.33
Regular English	4.20	4.21	4.23	4.09	4.70	4.29
Remedial English	0.82	0.78	0.95	0.83	0.89	0.86
Math Total	4.46	4.51	4.67	4.54	5.00	4.65
Advanced Math	0.36	0.38	0.35	0.47	0.65	0.45
Regular Math	3.05	3.15	3.17	3.13	3.65	3.25
Remedial Math	1.05	0.98	1.15	0.94	0.70	0.96
Science Total	3.86	3.98	4.01	4.18	4.95	4.23
Advanced Science	0.16	0.22	0.20	0.41	0.64	0.34
Regular Science	3.65	3.72	3.76	3.73	4.25	3.84
Remedial Science	0.06	0.04	0.04	0.05	0.06	0.05
Social Studies Total	4.04	4.05	4.06	4.09	4.65	4.19
Advanced Social Studies	0.11	0.19	0.18	0.35	0.51	0.29
Regular Social Studies	3.83	3.78	3.77	3.66	4.03	3.81
Remedial Social Studies	0.10	0.09	0.11	0.08	0.11	0.10
Foreign Language	2.18	2.36	2.35	2.46	3.23	2.55
Advanced Foreign Lang.	0.06	0.08	0.08	0.17	0.24	0.13
Regular Foreign Lang.	2.12	2.28	2.28	2.30	2.99	2.42
Remedial Foreign Lang.	0.00	0.00	0.00	0.00	0.00	0.00
Total Advanced	0.88	1.13	1.07	1.78	2.55	1.55
Total Regular	16.85	17.14	17.20	16.91	19.62	17.60
Total Remedial	2.02	1.89	2.25	1.90	1.77	1.96
Total Core	19.75	20.15	20.52	20.58	23.94	21.10

Note: Figures are weighted by district enrollment.

Table 1C
Secondary School (7-12) Instructional Staffing Patterns
(Number of Professional Staff per 1,000 District Pupils)
By District Size

Staffing Category	0-500 *n=65*	501-1000 *n=102*	1001-1500 *n=144*	1501-5000 *n=270*	5001-10,000 *n=58*	10,000 + *n=6*	Total *n=645*
English Total	7.00	6.01	5.75	5.45	5.34	4.90	5.48
Advanced English	0.09	0.16	0.24	0.34	0.37	0.45	0.33
Regular English	5.75	4.79	4.66	4.26	4.10	3.85	4.29
Remedial English	1.16	1.06	0.85	0.85	0.87	0.61	0.86
Math Total	6.61	5.51	5.08	4.62	4.37	4.02	4.65
Advanced Math	0.23	0.31	0.42	0.48	0.45	0.44	0.45
Regular Math	4.41	3.69	3.50	3.23	3.07	2.93	3.25
Remedial Math	1.97	1.50	1.16	0.91	0.85	0.64	0.96
Science Total	5.18	4.53	4.33	4.27	4.06	3.91	4.23
Advanced Science	0.05	0.07	0.19	0.36	0.42	0.54	0.34
Regular Science	5.08	4.41	4.09	3.87	3.59	3.32	3.84
Remedial Science	0.05	0.06	0.05	0.05	0.05	0.05	0.05
Social Studies Total	5.32	4.56	4.42	4.19	4.02	3.79	4.19
Advanced Social Studies	0.06	0.08	0.19	0.28	0.35	0.51	0.29
Regular Social Studies	5.11	4.37	4.12	3.81	3.59	3.21	3.81
Remedial Social Studies	0.15	0.11	0.11	0.10	0.08	0.07	0.10
Foreign Language	3.02	2.55	2.57	2.59	2.52	2.11	2.55
Advanced Foreign Lang.	0.03	0.04	0.08	0.15	0.15	0.16	0.13
Regular Foreign Lang.	2.99	2.51	2.49	2.44	2.37	1.96	2.42
Remedial Foreign Lang.	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Advanced	0.45	0.66	1.11	1.61	1.75	2.10	1.55
Total Regular	23.34	19.77	18.86	17.61	16.71	15.27	17.60
Total Remedial	3.32	2.74	2.17	1.91	1.85	1.37	1.96
Total Core	27.12	23.17	22.14	21.13	20.31	18.74	21.10

Note: Figures are weighted by district enrollment.

Table 1D
Secondary School (7-12) Instructional Staffing Patterns
(Number of FTE Professional Staff per 1,000 District Pupils)
By District Property Wealth

Staffing Category	Q1 *n=194*	Q2 *n=130*	Q3 *n=103*	Q4 *n=91*	Q5 *n=127*	Total *n=645*
English Total	5.32	5.28	5.21	5.44	6.21	5.48
Advanced English	0.17	0.23	0.33	0.44	0.49	0.33
Regular English	4.24	4.14	4.11	4.14	4.87	4.29
Remedial English	0.91	0.91	0.77	0.86	0.84	0.86
Math Total	4.73	4.43	4.49	4.55	5.11	4.65
Advanced Math	0.30	0.32	0.40	0.55	0.70	0.45
Regular Math	3.16	3.05	3.12	3.21	3.73	3.25
Remedial Math	1.27	1.05	0.97	0.79	0.68	0.96
Science Total	3.99	3.87	3.96	4.31	5.09	4.23
Advanced Science	0.12	0.20	0.29	0.48	0.65	0.34
Regular Science	3.82	3.62	3.64	3.78	4.38	3.84
Remedial Science	0.05	0.05	0.04	0.05	0.06	0.05
Social Studies Total	4.09	4.03	3.96	4.20	4.72	4.19
Advanced Social Studies	0.10	0.15	0.27	0.43	0.50	0.29
Regular Social Studies	3.87	3.77	3.63	3.70	4.10	3.81
Remedial Social Studies	0.12	0.11	0.07	0.07	0.12	0.10
Foreign Language	2.20	2.22	2.34	2.66	3.39	2.55
Advanced Foreign Lang.	0.04	0.07	0.11	0.20	0.25	0.13
Regular Foreign Lang.	2.17	2.15	2.23	2.46	3.13	2.42
Remedial Foreign Lang.	0.00	0.00	0.00	0.00	0.00	0.00
Total Advanced	0.72	0.97	1.40	2.09	2.60	1.55
Total Regular	17.25	16.73	16.72	17.29	20.22	17.60
Total Remedial	2.36	2.12	1.86	1.77	1.70	1.96
Total Core	20.33	19.83	19.97	21.16	24.52	21.10

Note: Figures are weighted by district enrollment.

Table 1E
Secondary School (7-12) Instructional Staffing Patterns
(Number of FTE Professional Staff per 1,000 District Pupils)
By District Income Wealth

Staffing Category	Q1 *n=238*	Q2 *n=132*	Q3 *n=99*	Q4 *n=78*	Q5 *n=98*	Total *n=645*
English Total	5.44	5.31	5.35	5.42	5.95	5.48
Advanced English	0.15	0.24	0.33	0.43	0.52	0.33
Regular English	4.32	4.14	4.21	4.20	4.63	4.29
Remedial English	0.97	0.93	0.80	0.79	0.80	0.86
Math Total	4.86	4.55	4.46	4.49	4.98	4.65
Advanced Math	0.29	0.31	0.42	0.52	0.73	0.45
Regular Math	3.22	3.05	3.20	3.20	3.60	3.25
Remedial Math	1.34	1.18	0.84	0.77	0.65	0.96
Science Total	4.03	3.92	4.11	4.23	4.94	4.23
Advanced Science	0.11	0.21	0.30	0.47	0.65	0.34
Regular Science	3.87	3.66	3.77	3.71	4.24	3.84
Remedial Science	0.06	0.05	0.04	0.05	0.05	0.05
Social Studies Total	4.18	4.02	4.10	4.16	4.54	4.19
Advanced Social Studies	0.08	0.18	0.27	0.39	0.51	0.29
Regular Social Studies	3.98	3.73	3.74	3.69	3.93	3.81
Remedial Social Studies	0.12	0.10	0.09	0.07	0.10	0.10
Foreign Language	2.23	2.24	2.44	2.58	3.33	2.55
Advanced Foreign Lang.	0.04	0.09	0.11	0.17	0.28	0.13
Regular Foreign Lang.	2.19	2.16	2.34	2.41	3.06	2.42
Remedial Foreign Lang.	0.00	0.00	0.00	0.00	0.00	0.00
Total Advanced	0.67	1.03	1.43	1.98	2.69	1.55
Total Regular	17.58	16.74	17.26	17.22	19.45	17.60
Total Remedial	2.49	2.27	1.77	1.68	1.60	1.96
Total Core	20.74	20.04	20.46	20.88	23.74	21.10

Note: Figures are weighted by district enrollment.

Table 1F
Secondary School (7-12) Instructional Staffing Patterns
(Number of FTE Professional Staff per 1,000 District Pupils)
By Percent of District Pupils in Poverty (FRPL count)

Staffing Category	0-10% *n=138*	11-25% *n=157*	26-50% *n=294*	51-75% *n=52*	75% + *n=4*	Total *n=645*
English Total	5.78	5.33	5.42	5.43	4.37	5.48
Advanced English	0.49	0.35	0.22	0.24	0.26	0.33
Regular English	4.56	4.20	4.23	4.13	3.04	4.29
Remedial English	0.73	0.78	0.97	1.05	1.07	0.86
Math Total	4.77	4.50	4.68	4.73	4.17	4.65
Advanced Math	0.68	0.43	0.34	0.30	0.19	0.45
Regular Math	3.48	3.24	3.15	2.99	2.65	3.25
Remedial Math	0.61	0.83	1.20	1.44	1.33	0.96
Science Total	4.75	4.15	4.03	3.75	3.21	4.23
Advanced Science	0.61	0.32	0.20	0.20	0.14	0.34
Regular Science	4.12	3.78	3.77	3.48	2.97	3.84
Remedial Science	0.03	0.04	0.06	0.06	0.10	0.05
Social Studies Total	4.43	4.13	4.16	3.86	3.22	4.19
Advanced Social Studies	0.47	0.30	0.15	0.21	0.05	0.29
Regular Social Studies	3.89	3.73	3.89	3.52	3.06	3.81
Remedial Social Studies	0.08	0.09	0.11	0.13	0.11	0.10
Foreign Language	3.10	2.46	2.29	2.15	2.26	2.55
Advanced Foreign Lang.	0.24	0.12	0.07	0.10	0.03	0.13
Regular Foreign Lang.	2.86	2.34	2.22	2.06	2.24	2.42
Remedial Foreign Lang.	0.00	0.00	0.00	0.00	0.00	0.00
Total Advanced	2.48	1.52	0.98	1.05	0.66	1.55
Total Regular	18.90	17.29	17.25	16.18	13.96	17.60
Total Remedial	1.45	1.75	2.34	2.69	2.62	1.96
Total Core	22.83	20.56	20.57	19.91	17.24	21.10

Note: Figures are weighted by district enrollment.

Table 2A
Percent Teacher Time and Percent Pupil Time
By Secondary School Instructional Area (7-12)
Big 4 City Districts, New York City and State Totals

	Big 4 City Districts			New York City			State Totals		
	n=4			*n=1*			*n=645*		
Subject Category	*TT*	*PT*	*TT/PT*	*TT*	*PT*	*TT/PT*	*TT*	*PT*	*TT/PT*
English Total	13.60	15.67	0.87	12.61	14.72	0.86	15.88	16.57	0.96
Advanced English	0.80	0.94	0.85	0.75	1.03	0.73	0.95	1.08	0.88
Regular English	9.91	12.05	0.82	9.29	11.16	0.83	12.45	13.90	0.90
Remedial English	2.89	2.68	1.08	2.57	2.53	1.02	2.48	1.60	1.55
Math Total	12.62	14.92	0.85	12.09	14.88	0.81	13.47	14.22	0.95
Advanced Math	0.86	0.90	0.96	0.79	0.97	0.81	1.28	1.42	0.90
Regular Math	8.09	11.13	0.73	7.51	10.03	0.75	9.40	11.03	0.85
Remedial Math	3.67	2.90	1.27	3.79	3.88	0.98	2.79	1.78	1.57
Science Total	9.10	11.21	0.81	8.22	11.24	0.73	12.24	12.38	0.99
Advanced Science	0.59	0.65	0.91	0.64	0.80	0.80	0.96	0.81	1.23
Regular Science	8.43	10.51	0.80	7.46	10.32	0.72	11.13	11.52	0.97
Remedial Science	0.07	0.06	1.17	0.11	0.11	1.00	0.14	0.05	2.80
Social Studies Total	9.70	12.99	0.75	9.14	12.72	0.72	12.18	14.97	0.81
Advanced Soc. Studies	0.90	1.06	0.85	0.67	0.91	0.74	0.81	0.95	0.85
Regular Social Studies	8.65	11.78	0.73	8.26	11.59	0.71	11.09	13.86	0.80
Remedial Social Studies	0.15	0.16	0.94	0.20	0.22	0.91	0.28	0.16	1.75
Foreign Language	4.48	5.35	0.84	4.83	7.04	0.69	7.33	8.22	0.89
Advanced For. Lang.	0.31	0.36	0.86	0.33	0.46	0.72	0.37	0.34	1.09
Regular Foreign Lang.	4.18	4.98	0.84	4.51	6.57	0.69	6.96	7.89	0.88
Remedial Foreign Lang.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Advanced	3.46	3.91	0.88	3.18	4.18	0.76	4.37	4.59	0.95
Total Regular	39.26	50.44	0.78	37.03	49.68	0.75	51.03	58.19	0.88
Total Remedial	6.77	5.79	1.17	6.67	6.74	0.99	5.70	3.58	1.59
Total Core	49.49	60.14	0.82	46.89	60.60	0.77	61.10	66.37	0.92

Note: Figures are weighted by district enrollment

TT - Percent Teacher Time PT - Percent Pupil Time

Table 2B
Percent Teacher Time and Percent Pupil Time
By Secondary School Instructional Area (7-12)
By District Spending Level

	Q1			Q2			Q3			Q4			Q5		
	n=87			*n=147*			*n=167*			*n=117*			*n=127*		
Subject Category	*TT*	*PT*	*TT/PT*	*TT*	*PT*	*TT/PT*	*TT*	*PT*	*TT/PT*	*TT*	*PT*	*TT/PT*	*TT*	*PT*	*TT/PT*
English Total	16.59	17.05	.97	16.19	16.69	0.97	16.26	16.64	0.98	15.43	16.55	0.93	15.31	16.17	0.95
Advanced English	0.58	0.56	1.04	0.82	0.87	0.94	0.75	0.81	0.93	1.12	1.34	0.84	1.27	1.54	0.82
Regular English	13.43	15.03	.089	13.00	14.40	0.90	12.67	14.03	0.90	11.90	13.53	0.88	11.78	13.09	0.90
Remedial English	2.58	1.46	1.77	2.37	1.41	1.68	2.84	1.80	1.58	2.41	1.67	1.44	2.26	1.55	1.46
Math Total	14.15	14.53	0.97	13.86	14.44	0.96	13.96	14.20	0.98	13.19	14.15	0.93	12.54	13.95	0.90
Advanced Math	1.16	1.19	0.97	1.16	1.26	0.92	1.06	1.11	0.95	1.37	1.54	0.89	1.61	1.87	0.86
Regular Math	9.71	11.24	0.86	9.72	11.34	0.86	9.50	10.99	0.86	9.10	10.81	0.84	9.16	10.90	0.84
Remedial Math	3.28	2.11	1.55	2.98	1.84	1.62	3.40	2.11	1.61	2.73	1.80	1.52	1.78	1.18	1.51
Science Total	12.32	12.58	0.98	12.31	12.50	0.98	12.03	12.35	0.97	12.17	12.38	0.98	12.42	12.18	1.02
Advanced Science	0.51	0.38	1.34	0.69	0.57	1.21	0.61	0.50	1.22	1.19	1.01	1.18	1.59	1.35	1.12
Regular Science	11.62	12.16	0.96	11.49	11.89	0.97	11.29	11.80	0.96	10.84	11.31	0.96	10.67	10.76	0.99
Remedial Science	0.18	0.05	3.60	0.12	0.04	3.00	0.13	0.05	2.60	0.14	0.05	2.80	0.16	0.06	2.67
Social Studies Total	12.90	15.32	0.84	12.53	15.35	0.82	12.22	15.06	0.81	11.93	14.79	0.81	11.72	14.52	0.81
Advanced Social Studies	0.36	0.38	0.95	0.58	0.67	0.87	0.55	0.63	0.87	1.03	1.22	0.84	1.29	1.55	0.83
Regular Social Studies	12.22	14.80	0.83	11.68	14.54	0.80	11.34	14.27	0.79	10.67	13.41	0.80	10.14	12.78	0.79
Remedial Social Studies	0.31	0.14	2.21	0.27	0.15	1.80	0.32	0.16	2.00	0.22	0.16	1.38	0.29	0.18	1.61
Foreign Language	6.98	7.78	0.90	7.27	8.09	0.90	7.05	8.00	0.88	7.14	8.03	0.89	8.09	9.01	0.90
Advanced Foreign Lang.	0.21	0.19	1.11	0.25	0.21	1.19	0.23	0.20	1.15	0.48	0.47	1.02	0.61	0.54	1.13
Regular Foreign Lang.	6.77	7.59	0.89	7.02	7.88	0.89	6.82	7.82	0.87	6.66	7.56	0.88	7.48	8.47	0.88
Remedial Foreign Lang.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Advanced	2.82	2.69	1.05	3.50	3.58	0.98	3.21	3.26	0.98	5.18	5.59	0.93	6.36	6.86	0.93
Total Regular	53.75	60.81	0.88	52.92	60.05	0.88	51.62	58.91	0.88	49.18	56.62	0.87	49.23	56.00	0.88
Total Remedial	6.36	3.76	1.69	5.74	3.43	1.67	6.69	4.11	1.63	5.50	3.69	1.49	4.49	2.96	1.52
Total Core	62.93	67.27	0.94	62.16	67.07	0.93	61.51	66.28	0.93	59.86	65.90	0.91	60.07	65.82	0.91

Note: Figures are weighted by district enrollment

TT -Percent Teacher Time PT - Percent Pupil Time

Table 2C
Percent Teacher Time and Percent Pupil Time
By Secondary School Instructional Area (7-12)
By District Size

	0-500			501-1000			1001-1500			1501-5000			5001-10000			10,000 +		
	n=65			*n=102*			*n=144*			*n=270*			*n=58*			*n=6*		
Subject Category	*TT*	*PT*	*TT/PT*	*TT*	*PT*	*TT/PT*	*TT*	*PT*	*TT/PT*	*TT*	*PT*	*TT/PT*	*TT*	*PT*	*TT/PT*	*TT*	*PT*	*TT/PT*
English Total	15.51	16.26	0.95	16.04	16.52	0.97	16.10	16.19	0.99	15.97	16.73	0.95	15.73	16.49	0.95	15.12	16.52	0.92
Adv. English	0.18	0.09	2.0	0.42	0.35	1.20	0.64	0.59	1.08	0.98	1.12	0.88	1.08	1.28	0.84	1.36	1.76	0.77
Regular English	12.69	14.82	0.86	12.80	14.54	0.88	13.05	14.21	0.92	12.50	14.03	0.89	12.10	13.46	0.90	11.92	13.30	0.90
Remedial English	2.64	1.34	1.97	2.82	1.63	1.73	2.41	1.40	1.72	2.49	1.58	1.58	2.55	1.75	1.46	1.83	1.47	1.24
Math Total	14.70	13.68	1.07	14.71	13.95	1.05	14.24	14.28	1.00	13.53	14.33	0.94	12.95	14.12	0.92	12.32	14.01	0.88
Advanced Math	0.49	0.26	1.88	0.82	0.64	1.28	1.13	1.11	1.02	1.37	1.52	0.90	1.31	1.52	0.86	1.36	1.62	0.84
Regular Math	9.71	10.62	0.91	9.86	10.82	0.91	9.81	11.11	0.88	9.47	11.13	0.85	9.07	10.90	0.83	9.03	10.87	0.83
Remedial Math	4.50	2.80	1.61	4.02	2.49	1.61	3.30	2.07	1.59	2.69	1.68	1.60	2.58	1.70	1.52	1.93	1.52	1.27
Science Total	11.46	11.24	1.02	12.05	11.81	1.02	12.14	12.04	1.01	12.49	12.56	0.99	11.91	12.32	0.97	12.07	12.51	0.96
Adv. Science	0.11	0.07	1.57	0.18	0.08	2.25	0.50	0.33	1.52	1.00	0.82	1.22	1.17	1.03	1.14	1.66	1.54	1.08
Regular Science	11.24	11.12	1.01	11.73	11.69	1.00	11.50	11.65	0.99	11.35	11.70	0.97	10.59	11.23	0.94	10.28	10.90	0.94
Remedial Science	0.11	0.04	2.75	0.15	0.04	3.75	0.14	0.05	2.80	0.14	0.05	2.80	0.14	0.06	2.33	0.14	0.07	2.00
Social Studies Total	11.80	15.06	0.78	12.23	14.75	0.83	12.42	14.72	0.84	12.32	15.14	0.81	11.90	14.80	0.80	11.73	14.98	0.78
Adv. Soc. Studies	0.11	0.08	1.38	0.21	0.19	1.11	0.48	0.50	0.96	0.78	0.89	0.88	1.01	1.25	0.81	1.57	2.00	0.79
Reg. Soc. Studies	11.32	14.85	0.76	11.72	14.43	0.81	11.63	14.10	0.82	11.25	14.09	0.80	10.65	13.37	0.80	9.94	12.74	0.78
Remed. Soc. Stud.	0.37	0.14	2.64	0.30	0.12	2.50	0.32	0.12	2.67	0.29	0.16	1.81	0.24	0.17	1.41	0.22	0.24	0.92
Foreign Lang. Total	6.55	6.89	0.95	6.77	7.22	0.94	7.10	7.59	0.94	7.52	8.39	0.90	7.39	8.53	0.87	6.50	7.74	0.84
Adv. For. Lang.	0.07	0.03	2.33	0.11	0.05	2.20	0.19	0.12	1.58	0.41	0.37	1.11	0.42	0.41	1.02	0.47	0.55	0.85
Reg. For. Lang.	6.48	6.86	0.90	6.66	7.17	0.93	6.90	7.46	0.92	7.11	8.02	0.89	6.96	8.12	0.86	6.03	7.19	0.84
Rem. For. Lang.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Advanced	0.97	0.53	1.83	1.73	1.32	1.31	2.95	2.66	1.11	4.54	4.73	0.96	5.00	5.50	0.91	6.42	7.47	0.86
Total Regular	51.44	58.64	0.88	52.77	58.65	0.90	52.88	58.44	0.91	51.68	58.96	0.88	49.38	57.09	0.87	47.20	55.00	0.86
Total Remedial	7.62	4.32	1.76	7.30	4.27	1.71	6.17	3.63	1.70	5.62	3.46	1.62	5.51	3.67	1.50	4.13	3.29	1.26
Total Core	60.02	63.49	0.95	61.80	64.25	0.96	62.00	64.82	0.96	61.84	67.15	0.92	59.89	66.26	0.90	57.74	65.76	0.88

Note: Figures are weighted by district enrollment

TT - Percent Teacher Time PT - Percent Pupil Time

Table 2D
Percent Teacher Time and Percent Pupil Time
By Secondary School Instructional Area (7-12)
By District Property Wealth

	Q1			Q2			Q3			Q4			Q5		
	n=194			*n=130*			*n=103*			*n=91*			*n=127*		
Subject Category	*TT*	*PT*	*TT/PT*	*TT*	*PT*	*TT/PT*	*TT*	*PT*	*TT/PT*	*TT*	*PT*	*TT/PT*	*TT*	*PT*	*TT/PT*
English Total	16.26	16.75	0.97	16.12	16.67	0.97	15.77	16.44	0.96	15.78	16.74	0.94	15.43	16.25	0.95
Advanced English	0.53	0.55	0.96	0.70	0.73	0.96	1.00	1.18	0.85	1.26	1.50	0.84	1.23	1.44	0.85
Regular English	12.98	14.68	0.88	12.66	14.16	0.89	12.45	13.66	0.91	12.03	13.51	0.89	12.12	13.48	0.90
Remedial English	2.76	1.52	1.82	2.76	1.78	1.55	2.32	1.60	1.45	2.49	1.72	1.45	2.07	1.34	1.54
Math Total	14.42	14.35	1.00	13.49	14.12	0.96	13.56	14.31	0.95	13.15	14.31	0.92	12.71	14.00	0.91
Advanced Math	0.91	0.86	1.16	0.98	1.03	0.95	1.22	1.37	0.89	1.58	1.84	0.86	1.73	2.00	0.87
Regular Math	9.67	11.12	0.87	9.34	11.04	0.85	9.42	11.02	0.85	9.28	11.04	0.84	9.29	10.92	0.85
Remedial Math	3.83	2.36	1.62	3.17	2.04	1.55	2.92	1.93	1.51	2.29	1.43	1.60	1.69	1.09	1.55
Science Total	12.22	12.33	0.99	11.87	12.29	0.97	11.99	12.24	0.98	12.49	12.72	0.98	12.64	12.29	1.03
Advanced Science	0.36	0.24	1.50	0.63	0.52	1.21	0.87	0.74	1.18	1.39	1.22	1.14	1.60	1.33	1.20
Regular Science	11.70	12.05	0.97	11.10	11.71	0.95	11.00	11.45	0.96	10.96	11.45	0.96	10.89	10.90	1.00
Remedial Science	0.16	0.04	4.00	0.14	0.05	2.80	0.12	0.05	2.40	0.14	0.06	2.33	0.15	0.06	2.50
Social Studies Total	12.57	15.34	0.82	12.34	15.12	0.82	12.00	14.79	0.81	12.17	15.08	0.81	11.81	14.51	0.81
Advanced Social Studies	0.30	0.31	0.97	0.45	0.53	0.85	0.80	0.95	0.84	1.23	1.49	0.83	1.27	1.49	0.85
Regular Social Studies	11.91	14.87	0.80	11.55	14.40	0.80	10.99	13.70	0.80	10.73	13.47	0.80	10.25	12.83	0.80
Remedial Social Studies	0.35	0.16	2.19	0.34	0.20	1.70	0.21	0.14	1.50	0.21	0.12	1.75	0.30	0.19	1.58
Foreign Lang. Total	6.76	7.50	0.90	6.80	7.84	0.87	7.07	7.99	0.88	7.69	8.59	0.90	8.42	9.24	0.91
Advanced Foreign Lang.	0.12	0.09	1.33	0.23	0.22	1.05	0.33	0.33	1.00	0.56	0.49	1.14	0.62	0.57	1.09
Regular Foreign Lang.	6.64	7.41	0.90	6.57	7.62	0.86	6.74	7.68	0.88	7.13	8.09	0.88	7.80	8.68	0.90
Remedial Foreign Lang.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Advanced	2.22	2.05	1.08	3.00	3.03	0.99	4.23	4.57	0.93	6.03	6.54	0.92	6.45	6.82	0.95
Total Regular	52.90	60.13	0.88	51.21	58.93	0.87	50.60	57.51	0.88	50.13	57.57	0.87	50.35	56.81	0.89
Total Remedial	7.11	4.09	1.74	6.41	4.07	1.57	5.57	3.71	1.50	5.14	3.32	1.55	4.21	2.66	1.58
Total Core	62.23	66.27	0.94	60.62	66.04	0.92	60.40	65.79	0.92	61.29	67.43	0.91	61.02	66.29	0.92

Note: Figures are weighted by district enrollment

TT -Percent Teacher Time PT - Percent Pupil Time

Table 2E
Percent Teacher Time and Percent Pupil Time
By Secondary School Instructional Area (7-12)
By District Income Wealth

	Q1			Q2			Q3			Q4			Q5		
	n=238			*n=132*			*n=99*			*n=78*			*n=98*		
Subject Category	*TT*	*PT*	*TT/PT*	*TT*	*PT*	*TT/PT*	*TT*	*PT*	*TT/PT*	*TT*	*PT*	*TT/PT*	*TT*	*PT*	*TT/PT*
English Total	16.35	16.78	0.97	15.97	16.63	0.96	15.91	16.72	0.95	15.93	16.56	0.96	15.16	16.14	0.94
Advanced English	0.46	0.45	1.02	0.72	0.81	0.88	0.99	1.14	0.87	1.23	1.43	0.86	1.33	1.57	0.85
Regular English	13.00	14.66	0.87	12.48	14.10	0.89	12.55	13.91	0.90	12.37	13.61	0.91	11.80	13.17	0.90
Remedial English	2.88	1.66	1.73	2.77	1.71	1.62	2.37	1.68	1.41	2.33	1.51	1.54	2.03	1.40	1.45
Math Total	14.53	14.27	1.02	13.67	14.31	0.96	13.22	14.15	0.93	13.18	14.35	0.92	12.76	14.01	0.91
Advanced Math	0.89	0.82	1.09	0.95	1.00	0.95	1.25	1.39	0.90	1.49	1.74	0.86	1.88	2.16	0.87
Regular Math	9.69	10.98	0.88	9.21	10.98	0.84	9.50	11.17	0.85	9.40	11.17	0.84	9.20	10.81	0.85
Remedial Math	3.96	2.47	1.60	3.51	2.33	1.51	2.47	1.58	1.56	2.29	1.44	1.59	1.69	1.03	1.64
Science Total	12.16	12.11	1.00	11.83	12.28	0.96	12.24	12.60	0.97	12.38	12.47	0.99	12.61	12.39	1.02
Advanced Science	0.33	0.21	1.57	0.63	0.53	1.19	0.89	0.76	1.17	1.35	1.15	1.17	1.65	1.41	1.17
Regular Science	11.65	11.85	0.93	11.06	11.70	0.95	11.23	11.81	0.95	10.89	11.27	0.97	10.83	10.93	0.99
Remedial Science	0.18	0.06	3.00	0.14	0.06	2.33	0.12	0.04	3.00	0.14	0.05	2.80	0.13	0.06	2.17
Social Studies Total	12.64	15.45	0.82	12.14	15.04	0.81	12.22	14.96	0.82	12.21	14.96	0.82	11.65	14.41	0.81
Advanced Soc. Studies	0.26	0.25	1.04	0.54	0.65	0.83	0.80	0.93	0.86	1.14	1.36	0.84	1.32	1.58	0.84
Regular Soc. Studies	12.00	15.04	0.80	11.29	14.18	0.80	11.15	13.87	0.80	10.87	13.49	0.81	10.08	12.67	0.80
Remedial Soc. Studies	0.38	0.16	2.38	0.31	0.20	0.16	0.27	0.16	1.69	0.20	0.11	1.82	0.26	0.17	1.53
Foreign Language	6.69	7.41	0.90	6.76	7.65	0.88	7.27	8.10	0.90	7.54	8.56	0.88	8.51	9.46	0.90
Advanced For. Lang.	0.12	0.08	1.50	0.26	0.26	1.00	0.32	0.28	1.14	0.48	0.45	1.07	0.70	0.64	1.09
Regular For. Lang.	6.57	7.34	0.89	6.50	7.39	0.88	6.95	7.83	0.89	7.06	8.12	0.87	7.82	8.82	0.89
Remedial For. Lang.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Advanced	2.05	1.81	1.13	3.10	3.26	0.95	4.25	4.49	0.95	5.70	6.13	0.93	6.87	7.36	0.93
Total Regular	52.92	59.88	0.88	50.54	58.35	0.87	51.37	58.59	0.88	50.59	57.66	0.88	49.73	56.39	0.88
Total Remedial	7.40	4.35	1.70	6.73	4.30	1.57	5.23	3.46	1.51	4.96	3.11	1.59	4.11	2.65	1.55
Total Core	62.37	66.04	0.94	60.37	65.91	0.92	60.86	66.54	0.91	61.25	66.90	0.92	60.70	66.41	0.91

Note: Figures are weighted by district enrollment

TT -Percent Teacher Time PT - Percent Pupil Time

Table 2F
Percent Teacher Time and Percent Pupil Time
By Secondary School Subject Area (7-12)
By Percent of District Pupils in Poverty

	0-10%			11-25%			26-50%			51-75%			over 75%		
	n=138			*n=157*			*n=294*			*n=52*			*n=4*		
Subject Category	*TT*	*PT*	*TT/PT*	*TT*	*PT*	*TT/PT*	*TT*	*PT*	*TT/PT*	*TT*	*PT*	*TT/PT*	*TT*	*PT*	*TT/PT*
English Total	15.65	16.42	0.96	15.86	16.64	0.96	16.11	16.70	0.97	15.98	16.56	0.97	13.46	14.64	0.92
Advanced English	1.31	1.52	0.86	1.04	1.19	0.87	0.65	0.72	0.90	0.70	0.81	0.86	0.78	0.98	0.80
Regular English	12.37	13.65	0.91	12.50	13.86	0.90	12.61	14.25	0.88	12.19	13.70	0.89	9.43	10.73	0.88
Remedial English	1.96	1.25	1.57	2.33	1.59	1.47	2.85	1.72	1.66	3.09	2.05	1.51	3.26	2.93	1.11
Math Total	12.95	14.18	0.91	13.36	14.28	0.94	13.88	14.18	0.98	13.87	14.32	0.97	13.08	14.38	0.91
Advanced Math	1.81	2.12	0.85	1.26	1.38	0.91	1.01	1.04	0.97	0.87	0.92	0.95	0.56	0.62	0.90
Regular Math	9.44	11.08	0.85	9.62	11.32	0.85	9.38	10.91	0.86	8.76	10.49	0.84	8.28	10.39	0.80
Remedial Math	1.71	0.99	1.73	2.48	1.58	1.57	3.50	2.24	1.56	4.24	2.91	1.46	4.23	3.37	1.26
Science Total	12.85	12.73	1.01	12.33	12.45	0.99	12.03	12.24	0.98	11.03	11.65	0.95	9.97	11.14	0.89
Advanced Science	1.59	1.37	1.16	0.95	0.78	1.22	0.59	0.46	1.28	0.58	0.55	1.05	0.38	0.29	1.31
Regular Science	11.17	11.32	0.99	11.25	11.62	0.97	11.26	11.73	0.96	10.26	11.01	0.93	9.29	10.68	0.87
Remedial Science	0.09	0.03	3.00	0.13	0.04	3.25	0.18	0.06	3.00	0.19	0.09	2.11	0.30	0.16	1.88
Social Studies Total	12.06	14.82	0.81	12.30	15.00	0.82	12.42	15.25	0.81	11.37	14.40	0.79	9.94	13.00	0.76
Advanced Soc. Studies	1.26	1.49	0.85	0.89	1.04	0.86	0.46	0.54	0.85	0.60	0.74	0.81	0.15	0.17	0.88
Regular Soc. Studies	10.60	13.21	0.80	11.15	13.80	0.81	11.64	14.56	0.80	10.39	13.37	0.78	9.44	12.48	0.76
Remedial Soc. Studies	0.20	0.11	1.82	0.26	0.16	1.63	0.33	0.16	2.06	0.38	0.28	1.36	0.35	0.35	1.00
Foreign Language	8.36	9.29	0.90	7.27	8.16	0.89	6.83	7.66	0.89	6.35	7.24	0.88	6.90	8.25	0.84
Advanced For. Lang.	0.64	0.60	1.07	0.34	0.30	1.13	0.21	0.17	1.24	0.29	0.33	0.88	0.08	0.06	1.33
Regular Foreign Lang.	7.71	8.69	0.89	6.93	7.86	0.88	6.62	7.49	0.88	6.06	6.98	0.87	6.82	8.19	0.83
Remedial For. Lang.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Advanced	6.61	7.10	0.93	4.48	4.69	0.96	2.93	2.92	1.00	3.04	3.36	0.90	1.95	2.13	0.92
Total Regular	51.30	57.95	0.89	51.45	58.46	0.88	51.49	58.93	0.87	47.66	55.56	0.86	43.26	52.47	0.82
Total Remedial	3.96	2.38	1.66	5.20	3.37	1.54	6.85	4.18	1.64	7.91	5.33	1.48	8.15	6.81	1.20
Total Core	61.87	67.44	0.92	61.13	66.53	0.92	61.27	66.04	0.93	58.61	64.24	0.91	53.35	61.41	0.87

Note: Figures are weighted by district enrollment

TT -Percent Teacher Time PT - Percent Pupil Time

Table 3A
Overall Pupil Load by Secondary Instructional Area (7-12)
Big 4 City Districts, New York City and State Totals

Staffing Category	Big 4 City Districts n=4	New York City n=1	State Totals n=645
English Total	93.26	111.71	92.88
Advanced English	95.53	131.06	99.80
Regular English	99.23	115.02	99.39
Remedial English	71.17	94.10	56.01
Math Total	96.34	117.78	94.36
Advanced Math	87.78	118.04	96.51
Regular Math	110.69	127.67	104.19
Remedial Math	67.17	98.09	59.70
Science Total	99.56	130.87	89.99
Advanced Science	88.68	119.57	71.57
Regular Science	100.48	132.36	92.02
Remedial Science	72.84	96.33	35.61
Social Studies Total	109.04	133.19	109.13
Advanced Social Studies	97.55	128.60	102.28
Regular Social Studies	110.80	134.30	110.97
Remedial Social Studies	90.07	103.12	59.07
Foreign Language	96.75	139.40	99.90
Advanced Foreign Lang.	100.35	136.60	75.74
Regular Foreign Lang.	96.43	139.60	100.84
Remedial Foreign Lang.	0	0	0
Average Advanced Load	93.98	126.77	88.09
Average Regular Load	103.52	129.79	101.48
Average Remedial Load	75.05	97.91	54.96
Average Core Load	92.30	119.60	85.47

Note: Figures are weighted by district enrollment.

Table 3B
Overall Pupil Load by Secondary Instructional Area (7-12)
By District Spending Level

Staffing Category	Q1 *n=87*	Q2 *n=147*	Q3 *n=167*	Q4 *n=117*	Q5 *n=127*	Total *n=645*
English Total	93.10	92.42	91.58	96.51	90.58	92.88
Advanced English	86.48	95.04	97.27	107.15	104.03	99.80
Regular English	101.34	99.44	99.30	102.12	95.40	99.39
Remedial English	51.90	52.67	54.33	60.44	58.19	56.01
Math Total	93.58	93.95	91.65	96.58	95.57	94.36
Advanced Math	89.33	96.71	93.72	100.50	98.23	96.51
Regular Math	104.83	104.40	103.52	106.37	101.95	104.19
Remedial Math	62.35	58.62	57.51	62.66	58.38	59.70
Science Total	92.62	91.05	91.98	91.38	83.96	89.99
Advanced Science	67.08	70.23	69.96	74.07	72.89	71.57
Regular Science	94.66	92.80	93.83	93.60	86.21	92.02
Remedial Science	22.03	28.49	42.21	37.06	38.37	35.61
Social Studies Total	107.33	109.64	110.29	111.19	106.01	109.13
Advanced Social Studies	98.43	101.43	100.54	104.22	103.41	102.28
Regular Social Studies	109.38	111.37	112.64	112.61	107.78	110.97
Remedial Social Studies	53.52	57.26	49.12	74.26	57.02	59.07
Foreign Language	100.89	99.92	101.87	101.07	95.99	99.90
Advanced Foreign Lang.	73.11	69.21	69.25	90.70	68.53	75.74
Regular Foreign Lang.	101.39	100.84	102.65	101.82	97.56	100.84
Remedial Foreign Lang.	0	0	0	0	0	0
Average Advanced Load	81.18	85.98	85.59	93.71	89.85	88.09
Average Regular Load	102.32	101.77	102.38	103.30	97.78	101.48
Average Remedial Load	53.44	53.35	51.42	60.43	55.03	54.96
Average Core Load	83.23	84.51	84.16	89.40	84.55	85.47

Note: Figures are weighted by district enrollment.

Table 3C
Overall Pupil Load by Secondary Instructional Area (7-12)
By District Size

Staffing Category	0-500 *n=65*	501-1000 *n=102*	1001-1500 *n=144*	1501-5000 *n=270*	5001-10,000 *n=58*	10,000+ *n=6*	Total *n=645*
English Total	77.69	83.59	86.28	93.62	95.39	101.81	92.88
Advanced English	42.70	64.90	79.18	100.00	105.89	117.88	99.80
Regular English	86.56	92.38	93.53	100.41	101.29	103.81	99.39
Remedial English	40.47	46.84	48.26	55.53	59.42	72.13	56.01
Math Total	69.48	76.91	85.93	94.92	99.62	105.61	94.36
Advanced Math	36.18	63.01	77.10	98.78	103.06	109.18	96.51
Regular Math	81.86	89.15	96.87	104.79	109.00	111.59	104.19
Remedial Math	46.65	53.05	54.86	58.63	63.19	73.51	59.70
Science Total	72.64	79.83	84.81	89.92	94.07	96.54	89.99
Advanced Science	50.21	41.35	54.15	69.30	77.96	84.91	71.57
Regular Science	73.29	81.09	86.62	91.98	96.30	98.76	92.02
Remedial Science	24.36	25.11	31.08	32.41	39.07	46.33	35.61
Social Studies Total	94.09	97.98	101.24	109.57	112.93	118.92	109.13
Advanced Social Studies	52.37	71.84	86.01	98.29	111.32	115.66	102.28
Regular Social Studies	96.79	100.09	103.57	111.74	114.07	119.57	110.97
Remedial Social Studies	22.74	33.82	34.27	52.28	69.76	102.10	59.07
Foreign Language	79.85	87.89	91.69	99.91	104.95	110.03	99.90
Advanced Foreign Lang.	25.97	38.88	50.74	72.89	78.97	100.03	75.74
Regular Foreign Lang.	80.32	88.44	92.56	101.02	105.90	109.94	100.84
Remedial Foreign Lang.	0	0	0	0	0	0	0
Average Advanced Load	36.27	59.88	71.28	88.94	95.91	105.53	88.09
Average Regular Load	83.84	90.23	94.63	101.99	105.31	108.71	101.48
Average Remedial Load	42.45	47.24	48.35	53.44	58.81	76.96	54.96
Average Core Load	67.91	73.64	76.96	85.35	90.18	98.86	85.47

Note: Figures are weighted by district enrollment.

Table 3D
Overall Pupil Load by Secondary Instructional Area (7-12)
By District Property Wealth

Staffing Category	Q1 *n=194*	Q2 *n=130*	Q3 *n=103*	Q4 *n=91*	Q5 *n=127*	Total *n=645*
English Total	90.91	92.53	95.63	95.25	89.62	92.88
Advanced English	89.62	93.83	108.24	105.20	98.44	99.80
Regular English	99.99	99.87	101.04	100.96	94.62	99.39
Remedial English	49.26	57.14	59.16	59.69	54.24	56.01
Math Total	88.60	93.97	97.07	97.97	93.83	94.36
Advanced Math	83.39	93.95	102.51	103.76	97.11	96.51
Regular Math	101.61	105.34	106.94	106.71	99.81	104.19
Remedial Math	58.03	61.97	61.19	60.70	56.03	59.70
Science Total	89.09	92.54	93.83	91.34	82.40	89.99
Advanced Science	63.28	72.80	73.74	76.94	67.82	71.57
Regular Science	90.87	94.36	95.74	93.59	84.77	92.02
Remedial Science	26.79	34.40	43.84	34.98	34.90	35.61
Social Studies Total	107.56	109.55	112.86	110.94	104.13	109.13
Advanced Social Studies	88.47	107.43	103.63	108.12	98.34	102.28
Regular Social Studies	110.06	111.46	114.17	112.44	106.17	110.97
Remedial Social Studies	49.99	65.21	64.65	59.91	54.43	59.07
Foreign Language	98.37	103.29	103.54	100.32	93.33	99.90
Advanced Foreign Lang.	56.08	79.91	87.74	73.22	72.26	75.74
Regular Foreign Lang.	98.85	103.96	104.23	101.96	94.55	100.84
Remedial Foreign Lang.	0	0	0	0	0	0
Average Advanced Load	76.70	87.55	94.90	93.50	86.27	88.09
Average Regular Load	100.28	103.00	104.42	103.13	95.98	101.48
Average Remedial Load	50.94	58.02	56.94	55.94	52.66	54.96
Average Core Load	80.77	86.50	89.52	87.63	82.37	85.47

Note: Figures are weighted by district enrollment.

Table 3E
Overall Pupil Load by Secondary Instructional Area (7-12)
By District Income Wealth

	Q1	Q2	Q3	Q4	Q5	Total
Staffing Category	*n=238*	*n=132*	*n=99*	*n=78*	*n=98*	*n=645*
English Total	90.40	92.53	94.85	94.64	91.58	92.88
Advanced English	84.51	100.07	103.40	103.93	100.69	99.80
Regular English	99.38	100.15	100.39	100.39	96.16	99.39
Remedial English	51.67	54.70	59.59	57.10	56.69	56.01
Math Total	86.95	93.37	96.85	99.41	94.46	94.36
Advanced Math	82.48	93.45	100.75	103.77	99.19	96.51
Regular Math	99.79	105.50	105.85	107.97	100.89	104.19
Remedial Math	58.84	61.85	61.77	60.37	54.75	59.70
Science Total	87.54	92.00	93.05	91.92	84.45	89.99
Advanced Science	62.94	71.01	71.71	75.21	71.99	71.57
Regular Science	89.29	93.86	95.05	94.31	86.53	92.02
Remedial Science	29.52	41.76	30.08	36.63	38.27	35.61
Social Studies Total	107.42	109.69	110.42	111.20	106.33	109.13
Advanced Social Studies	83.99	104.57	103.13	107.08	101.81	102.28
Regular Social Studies	110.16	111.35	112.18	112.60	108.05	110.97
Remedial Social Studies	42.05	70.74	64.52	56.02	56.87	59.07
Foreign Language	98.07	100.69	100.71	103.29	95.89	99.90
Advanced Foreign Lang.	61.60	80.73	74.24	78.15	74.91	75.74
Regular Foreign Lang.	98.78	101.05	101.69	104.54	97.32	100.84
Remedial Foreign Lang.	0	0	0	0	0	0
Average Advanced Load	74.27	88.85	91.19	93.78	89.89	88.09
Average Regular Load	99.47	102.38	103.03	103.96	97.79	101.48
Average Remedial Load	51.09	58.79	57.29	53.60	53.67	54.96
Average Core Load	80.14	86.69	87.54	87.77	84.58	85.57

Note: Figures are weighted by district enrollment.

Table 3F
Overall Pupil Load by Secondary Instructional Area (7-12)
By Percent of District Pupils in Poverty (FRPL count)

	0-10%	11-25%	26-50%	51-75%	75% +	Total
Staffing Category	*n=138*	*n=157*	*n=294*	*n=52*	*n=4*	*n=645*
English Total	93.62	94.93	91.83	87.33	98.67	92.88
Advanced English	102.51	101.41	96.04	96.29	114.67	99.80
Regular English	98.64	100.59	100.01	94.67	102.78	99.39
Remedial English	54.13	60.20	53.64	55.06	83.11	56.01
Math Total	97.91	96.95	90.93	87.82	100.04	94.36
Advanced Math	104.31	98.20	90.36	90.60	84.52	96.51
Regular Math	104.51	106.24	102.74	101.45	112.36	104.19
Remedial Math	56.17	60.99	60.77	60.01	76.13	59.70
Science Total	88.37	91.32	89.99	89.60	101.15	89.99
Advanced Science	74.72	72.12	66.41	77.71	61.90	71.57
Regular Science	90.24	93.47	92.13	91.12	103.85	92.02
Remedial Science	30.89	35.32	34.74	48.43	37.78	35.61
Social Studies Total	109.38	110.07	108.26	107.70	119.12	109.13
Advanced Social Studies	104.26	101.25	101.78	100.72	89.68	102.28
Regular Social Studies	110.98	111.87	110.31	109.72	120.14	110.97
Remedial Social Studies	53.71	58.48	59.11	73.13	87.03	59.07
Foreign Language	99.35	101.52	99.25	97.91	109.50	99.90
Advanced Foreign Lang.	77.40	74.68	69.30	91.67	62.84	75.74
Regular Foreign Lang.	100.55	102.59	100.07	98.06	109.96	100.84
Remedial Foreign Lang.	0	0	0	0	0	0
Average Advanced Load	93.12	89.37	82.60	89.48	89.72	88.09
Average Regular Load	100.99	102.95	101.05	99.00	109.82	101.48
Average Remedial Load	52.61	55.68	54.90	59.23	67.51	54.96
Average Core Load	86.89	86.41	83.47	85.33	92.45	85.47

Note: Figures are weighted by district enrollment.